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ARTICLE I. *On the Typhus Fever which occurred at Philadelphia in the spring and summer of* 1836. By W. W. GERHARD, M. D., one of the Physicians of the Philadelphia Hospital, Blockley. [Part second.]

The cases published in the first part of this memoir (see this Journal for February, 1837) are sufficient to illustrate the leading facts of the pathological anatomy of this form of fever.

The glands of Peyer were found not merely free from the peculiar lesion occurring in dothinenteritis or typhoid fever, but these follicles and the rest of the intestine were more healthy in the petechial fever than in the majority of other diseases. We are the more certain of the state of these glands because our attention was closely directed to this subject, and we had previously made most numerous examinations of the glands in typhoid fever and in other diseases; we could therefore pronounce with certainty as to their actual condition. The mesenteric glands were always either normal or very little injected; and the spleen was altered only in one third of the whole number of patients.

The lesions of other organs were as various as they are in most acute diseases, and evidently depended in a great degree upon the season, or upon the accidental circumstances in which the patient was placed. Thus, we had several cases of pneumonia in the months of March and April, while the lesions of the intestine were remarkably insignificant. But in the warmer season of June, July and

August, diarrhœa was frequent, and was accompanied not by a lesion of the glands of Peyer, but by softening or other affections of the mucous coat of the colon.

The pathological anatomy of a disease will usually afford us useful data which may point out the analogies which unite it with other maladies. Now the absence of a permanent characteristic lesion, at least in the solids of the body, is one of the most remarkable peculiarities of the exanthemata. In all these diseases there is no constant lesion, with the exception of the eruption itself. The analogy is not limited to the pathological anatomy, as the subsequent part of this memoir will prove; and without wishing to lay too much stress upon the resemblances which may exist in some of the symptoms of a disease which presents a strong analogy, we cannot pass them by without due attention. As far, therefore, as the pathological anatomy will direct us, we are constrained to class typhus fever amongst the exanthemata. We shall presently examine the relations which the symptoms may bear to those of other diseases.

In the account which we shall give of the symptoms of the epidemic of typhus, it is not our intention to subject them all to a rigid numerical analysis. We shall describe the symptoms, but enumerate those only which are sufficiently important to render the diagnosis between this fever and dothinenteritis precise. It should, however, be remembered that the symptoms which are stated without an exact arithmetical estimate of their relative frequency, were all carefully noted and examined attentively, one by one. There can, therefore, be little danger of any inaccuracy in the estimate given of their relative frequency, and still less of incorrectness in their description.

Exterior. An eruption of a peculiar character appeared on the skin of 32 out of 36 whites, in whom it was noted. Of the four cases in which it was not visible, one died upon the seventh day of the disease, and the others presented slight symptoms of fever, which disappeared in the course of four or five days. It was also visible, though less distinctly, in mulattoes; and we may infer that the colour of the skin alone prevented its developement in the negroes. It consisted of petechiæ, which in not more than six cases resembled the rose-coloured spots of dothinenteritis. The petechiæ assumed the form of small reddish or purple spots from the breadth of one line, or even the eighth of an inch, down to that of a minute point. They were not elevated above the surface of the skin, and were without the regular round or oval shape of the rose-coloured spots. The colour of the petechiæ at first was of a lighter red, and could with difficulty be distinguished from the spots of typhoid fever; but on the second

or third day they assumed the dull red or purple colour of the eruption proper to the typhus; sometimes they were nearly black.

The eruption of petechiæ must therefore be regarded as a characteristic symptom, for it was present in nearly every case in which the symptom was sought for. The eruption is indeed quite as constant as that of measles or small pox; for those cases in which it could not be detected either died before the day on which it usually appeared, or were ephemeral, abortive cases of the disease, which ceased before passing through its regular periods. The petechiæ appeared from the sixth to the eighth day, after the beginning of the symptoms, and disappeared from the fourteenth to the twentieth day. But the time of their disappearance varied much, and the gradual diminution of their colour rendered it difficult for us to indicate its precise date. The eruption would occasionally fade without entirely disappearing, and again resume its former colour. This sudden and unexpected fading of the eruption coincided with a depression of strength, and was often of fatal prognosis. After death, a slight bluish ecchymosis, easily traced in the thickness of the true skin, indicated the place of the larger petechiæ, while the smaller were no longer visible. The regular progress of the eruption proves the close analogy which exists between typhus and some of the eruptive diseases, especially scarlatina and measles.

There is a marked difference between the petechial eruption and the rose-coloured spots of typhoid fever. In typhoid fever the eruption is rare, very seldom extending beyond the abdomen and thorax; whereas in the epidemic typhus, the eruption is almost always general, extending to the limbs as well as the trunk. Whether the two eruptions are occasionally found together in the same individual, I cannot state positively. Besides, in typhoid fevers the reddish or rosy hue of the spots remains, and they are scarcely ever of the dull livid or purple tint of the petechiæ of typhus. It is certain that in a few cases the larger petechiæ resembled rose-coloured spots so closely, that without much care they might have been confounded with them.

The eruption of sudamina, or minute transparent vesicles about the groins and neck was also observed, but more rarely than the petechiæ. It was not so frequent as in typhoid fever.

The skin in whites presented other changes than those which have been mentioned. A constant symptom observed in every case was a dull, livid, red hue of the countenance, extending nearly over its whole surface; sometimes this colour approached a purple. It coincided with a strong dark red suffusion of the capillary vessels of the conjunctiva which appeared at the same time with it, but usually dis-

appeared at an earlier stage than the injection of the eyes. The conjunctiva never presented the bright red tinge or the brilliant aspect observed in acute inflammatory diseases of the brain, or of the eye itself. The expression was dull, and the blood-vessels had a dark red tinge, instead of their usual scarlet hue. The suffusion of the face and eyes was so constant and so well marked in the fully formed disease, that it served almost as a pathognomonic sign. It was generally most evident with patients of a full habit of body. Towards the close of the disease, the reddish colour was gradually changed into a dull ashen tint, which remained until the entire recovery of the patient.

Emaciation did not take place in the early stages, it was indeed not very visible until the fever began to decline. If the other symptoms continued without increased severity, the wasting away of the flesh under such circumstances was generally a favourable sign, and indicated approaching convalescence. Stout, corpulent persons generally suffered more than those who were of a spare habit of body, and more frequently perished; and in a large majority of our dissections we therefore found the fat extremely abundant.

The *strength* of the patients failed in a great degree, nearly from the beginning. Thus, the man whose case is alluded to in the first part of this article, evidently lost his strength from the very moment of the attack, which seemed to arise from strict contagion. Other patients were able to walk about, but none were able to attend to their usual business except with extreme difficulty, and only in the earliest stage of the disease. But this prostration of the early stage was never so intense as that which comes on at a later period, when the fever begins to subside. The secondary prostration is of a more severe character, and is distinguished from the temporary loss of strength occurring at the beginning of the disease, by the coldness of the extremities, and the weak, fluttering pulse which usually attend it. In itself, the loss of strength at this stage indicates the subsidence of the fever, and is not a sign of bad import; but it must be watched, and if it advances too far, it often proves destructive to the patient. This second period of prostration, was in general easily combated by appropriate treatment.

The *cerebral symptoms* were certainly amongst the most characteristic of the typhus fever. They appeared very early in the disease and continued with greater or less intensity throughout its whole course. We shall examine them separately.

Stupor. About the same time with the prostration of strength, there was more or less stupor observed. It was perceptible in our

patients from the moment when they complained of their first symptoms. It was frequently slight, but could always be recognised by a little attention, and gradually increased until the middle period of the disease, when it was most intense; nor did it cease entirely until the strength of the patient returned. There were usually some traces of it during the convalescence. The stupor rarely passed into complete coma, except in fatal cases; hence coma was always a most unfavourable sign. Still, to a moderate extent, it was occasionally witnessed without being followed by the same danger as in ordinary diseases.

Vertigo and confusion of sight was also one of the first symptoms: thus in most cases in which they were noted, they occurred on the first day, and in the others very near the beginning of the disease. The same symptom exists in the dothinenteritis, but in a less constant and less severe degree. In the typhus fever it appears so early, and is so well marked, as to impress a peculiar appearance upon the physiognomy of the patient.

Tinnitus aurium, generally combined with partial deafness, is also very constant. Sometimes it is confined to one ear, but usually extends to both. The deafness is much more intense than in typhoid fever, but it may still be dissipated for a time by addressing the patient in a loud tone of voice. Some ringing of the ears and a slight vertigo frequently remain after the other symptoms of the disease are completely removed.

The *sleep* was in the early stages uniformly disturbed, although the patient lay almost constantly in a state of somnolence. Still it was not a sound sleep, nor did this take place until the patient either recovered or sank into a profound state of stupor. As in dothinenteritis there was somnolence, but nearly complete absence of refreshing sleep.

The *intelligence* was impaired from the earliest stages. At first the alteration was so slight as to escape the attention of an inexperienced observer, but when the fever had fully set in there was at least confusion of the intellect, and nearly always delirium. This last symptom was absent only in a few cases. The delirium was not noisy, except in about one patient out of twenty. In the immense majority of patients it was dull, muttering and incoherent. The delirium became more tranquil, and was exchanged for ordinary stupor or coma, when the fever was at its height. It did not cease entirely until the complete establishment of convalescence. Even after recovery the intellect of the patient was more enfeebled than it is in ordinary diseases, and regained its usual strength but slowly.

The *nervous symptoms*, which are usually considered by the French

writers as belonging to the ataxic form of dothinenteritis, were present in a greater or less degree in every patient who survived the first two or three days after the attack. Those who perished thus early, died of the mere depression and the accompanying stupor; but from the third to the seventh day, various disorders of the nervous functions manifested themselves. These symptoms were the following:—The *sensibility* of the skin was universally augmented when the stupor was not so great as to render the patient insensible, or nearly so, to all external impressions. The tenderness, upon pressure, was so much increased as to induce us to refer the external soreness at the epigastrium, when pressure was made upon the abdomen, to an affection of the internal organs; but on more careful examination the sensibility was nearly equally increased in every part of the body, and was evidently external. The cutaneous tenderness was preceded by muscular soreness, which lessened as the skin became more sensitive.

In no case did we detect paralysis previously to the approach of coma; if it seemed to exist, we soon ascertained that it was only apparent, and caused by the extreme prostration.

Subsultus of the tendons at the wrist was observed in three cases out of four; in the more severe cases the subsultus extended to the muscles of the legs and face. When it appeared at the face, the corners of the mouth were drawn rapidly to one side or the other, giving a singular expression to the countenance. In the worst cases the subsultus extended to nearly all the muscles of the body, keeping the patient in a constant state of tremor, not unlike a severe chill. Such cases were not necessarily fatal, although the sign was of bad import, but of vastly less importance than in typhoid fever. The spasmodic contractions of the muscles were not permanent; hence there was no constant rigidity observed in any case. The smaller muscles were much more affected than the larger ones.

Abdominal symptoms.—In the ordinary typhoid fever of France, the symptoms connected with the alimentary canal are amongst the earliest and most prominent in the disease. The diarrhœa is constant, and occurs amongst the first symptoms; its intensity bears a tolerably exact, but not an invariable, relation to the extent of alteration in the intestinal follicles. As the lesion of the follicles is so constantly present, it is considered by most authors as the cause of the diarrhœa, although this symptom partly depends upon the irritation of the large intestine. In the epidemic of typhus, the intestines were found remarkably free from disease of any kind, except towards its conclusion, when diarrhœa became a frequent symptom. It did not, however, appear until the middle of summer, when the weather became hot and

dysentery was very prevalent. From the epidemic of dysentery which then existed, and the absence of any distinct and constant anatomical lesion, we were led to infer that the diarrhœa was an accidental, instead of a permanent symptom. In short, that it was by no means characteristic of the fever, but that it might appear as a symptom, just as it often does in pneumonia and other febrile diseases. Patients never seemed to perish from the severity of the diarrhœa, which was in general quickly and readily checked.

The *appetite* was generally destroyed in the advanced stages of the disease, and in whites it disappeared from the beginning. If they took food, it was mechanically, because it was offered to them, and evidently not from a desire of eating. The blacks, on the other hand, did not lose their appetite so universally; some asked for solid food, and ate the usual quantity of it. As the symptoms of anorexia was then far from constant, it is obviously less important than it is in typhoid fever, where it constitutes one of the earliest and most important phenomena. Nausea or vomiting was extremely rare, so that I scarcely find either of these symptoms noted in a single case. The thirst was great; it was intense in bad cases, when the patients retained sufficient consciousness to desire drink, and only lost by the supervention of entire coma. In convalescence it gradually ceased.

The *conformation of the abdomen* presented every possible variety. In the greater number, it was slightly tympanitic, but in many patients it was either retracted, or altogether of the natural form. The degree of sensibility of the abdomen was generally very doubtful, as the extreme tenderness of the skin gave rise to so much inconvenience that the patient confounded the pain which was seated in the viscera with that which was confined to their cutaneous covering.

The *urine* was examined very attentively, and was remarkable merely for its extraordinary freedom from brick-red deposit, or the changes so frequently observed during the course of fever.

The *thoracic symptoms* were of two kinds; those which were almost essential to the disease and rarely absent, and others which were accidental and frequently wanting during its whole course. In the earliest stage of this disease, although the respiration was usually remarkably vesicular in the whole anterior part of the chest, it was feeble and imperfect at the posterior part. This feebleness was accompanied by a dull sound on percussion, and was shown by our dissections to depend upon the engorgement of the lungs, which appeared very early in the disease; it was frequently combined with a subcrepitant or mucous rhonchus. The latter symptom was by no means constant, and was always vastly more frequent in the earlier cases

which occurred in the winter than in those which were admitted in the summer, towards the close of the epidemic. The engorgement ceased at the same period that the dark, livid, red tinge of the face disappeared, and was apparently owing to similar causes. The sibilant rhonchus which is usually present in dothinenteritis was rare in the typhus. Pneumonia was the most frequent accidental lesion, more frequent in winter than summer, and differed from the ordinary pneumonia merely in the greater abundance of loose mucous rhonchus and the slight developement of bronchial respiration, and of fine crepitas; it was also rarely attended with pain. In many cases there was no pneumonia, although the bronchial tubes were evidently inflamed, and the respiration offered the characteristic rhonchi of bronchitis. This last affection was most prevalent in the colder weather, when epidemic catarrh chanced to prevail. It was the converse of the dysentery which affected the patients attacked during the warm weather. During the prevalence of influenza, the bronchitis sometimes appeared as the first symptom, and rendered the diagnosis for a time extremely obscure. Nor did it become clear, until the cerebral symptoms were developed, and the stupor and injected eye showed that the disease was of a more serious character.

Phthisis, in one case, began during the course of the fever, and rapidly ran through its stages; but it was much less frequent after typhus than dothinenteritis. In the case alluded to, the patient was a young man of slender frame, and probably already bore the seeds of the tubercular disease. When phthisis existed previously to the typhus, the influence of the latter upon the course of the former disease, was extremely doubtful, unless the case had been already advanced. A few tuberculous patients sank under typhus in a day or two after the attack; but in general they seemed more exempt from it than other individuals, as was proved by the small number of tuberculous subjects found amongst those dead of the fever, (not exceeding one in ten,) and by the comparative exemption of our consumptive patients from the effects of the contagion. Although the fever patients were placed in the same ward with those affected with phthisis, the instances in which it appeared amongst them were extremely few in number. This comparative exemption was rendered the more evident, as a considerable number of patients affected with diseases of the brain or the heart became victims of the disease. We even believed that the diseases of the brain (as paralysis from previous hæmorrhage) evidently favoured the developement of typhus.

The action of the *heart* was remarkably feeble, although the extent in which its shock was felt did not seem less great than in health. This

diminished action of the heart is mentioned by many writers on typhoid fever, and is very nearly a constant symptom. It was of course greatest when the pulsation at the wrist was feeble, and easily compressed. In patients already exhausted by a previous disease, the feebleness of the heart and the pulse was extreme from the earliest period of the disease, and sometimes constituted the most prominent symptom. These cases were generally fatal.

The *pulse* was usually more frequent than in typhoid fever. Of thirty cases which terminated in recovery, taken at hazard from the whole mass of observations, the pulse ranged from 70 to 140 in the minute. The pulse was always noted in the morning, and occasionally in the evening, so that the average was a little lower than if it had been always counted several times in a day. Of these patients the maximum frequency of the pulse was less than 100 in the minute in four cases, from 100 to 110 in six cases, 110 to 120 in eleven, and 120 and upwards in nine.

Of ten cases taken also without selection and terminating fatally, the pulse varied from 68 to 150. But one patient, however, presented a pulse less frequent than 90 in the minute; and that patient, whose pulse was at 68, died two or three days after the attack, before the fever was completely developed. That rapid course occurred in one already exhausted by protracted chronic disease. The maximum frequency was less than 100 in one patient, from 110 to 120 in another; but in the eight others, that is, four-fifths of the whole number, it was above 120. We may therefore consider a pulse of more than 120 in the morning as an unfavourable sign, though of course not necessarily of fatal import.

The evening exacerbation was well marked, and coincided with increased heat of skin. The pulse was sometimes slow: when the skin was cool and the patient extremely exhausted, this slowness indicated a depressed circulation, and was usually a fatal sign. But in general the circulation was equable and the pulse frequent. The fever was distinctly continued, but with an evening exacerbation. In a large majority of our patients the pulse was very easily compressed, and in most cases it was decidedly feeble, at least in the advanced stages at which our early cases were admitted. In some patients it was full, but soft and compressible from the beginning. In a few, where some local inflammation was present, the pulse approached in character that of ordinary inflammatory diseases. The peculiar undulation in the motion of the artery, which is so frequent in typhoid fever, was rare in the typhus. When the fever abated the pulse sank very rapidly, and during the state of collapse attending

the beginning of convalescence, remained extremely feeble. When death approached it was also feeble, but it did not sink so suddenly or so rapidly.

The *temperature* of the body was elevated above the natural standard, as in other febrile diseases; still it offered some peculiarities which were more marked in this fever than in others of analogous appearance. Instead of the warm but frequently moist surface of the body attendant upon dothinenteritis, we observed a dry skin, which gave to the hand the peculiar pungent sensation frequently alluded to by writers, and termed "calor mordicans." This pungent heat was so remarkable, that the resident physicians and others would frequently diagnosticate the disease from this symptom only. There was occasionally perspiration, but this was rare, and never abundant, until convalescence approached. The heat of the skin declined towards the termination of the disease; and instead of subsiding merely to the natural standard, it evidently sank below it. This coolness of the surface coincided with the feebleness of the pulse, and required a supporting treatment.

There was another symptom closely connected with the skin. It was the peculiar *odour* from the body of the patients. This was pungent, ammoniacal, and offensive in the most severe cases; especially in fat, plethoric individuals: in some cases its smell resembled that of putrid animal matter, and remained so a few days before death. The patients who exhaled the odour in the strongest degree were observed to communicate the disease by direct contagion more quickly than others. In the cases of several of the nurses, there could be no doubt of the direct transmission of the disease from the person of these offensive patients. The bodies of these individuals putrefied very rapidly after death, but before putrefaction was completely established the odour was rather less pungent than it was during life. Cases of this kind are to be classed amongst those which procured for these forms of fever the appellation of putrid.

The *blood* drawn from patients affected with typhus fever has always attracted much attention. Even in dothinenteritis, it is more altered from its natural appearance than it is in most diseases; but in the petechial typhus, the change of aspect is still greater. We examined it in various stages of the disease, except those only in which the prostration was so considerable as to render blood-letting obviously improper. At a very early period it was dark, without the buffy coat, and offered a large, but soft and dark coloured, coagulum. At a more advanced stage, it presented in some patients the dissolved appearance described by various authors as characteristic of the typhus

or putrid fevers. When this dissolved state of the blood occurred, the patients were feeble, and did not bear the loss of more than two or three ounces of blood without fainting. Notwithstanding this state of the blood, only three or four patients in a hundred presented the sloughs and ulcerations about the sacrum and trochanters which are so common in dothinenteritis or nervous fever. Perhaps this absence of the sloughs was owing to the shorter duration of the typhus—at least, the fact is curious. Vibices, or large purple spots, were not recorded in more than two or three cases. Of course they could not have been discovered in the blacks; but at any rate, from the small proportion occurring amongst the whites, the number of these spots must have been small amongst all patients.

We cannot more clearly illustrate the symptoms occurring in the cases which terminated in recovery than by presenting two or three cases as examples. The last of these three patients has just recovered, (April, 1837,) and offers one of a series of sporadic cases of fever from time to time admitted into the hospital. They all originated in the house, and the subjects of the disease were in previous good health when exposed to the cause of the fever.

Case VII.—Dr. F., one of the house physicians at the hospital, had been extremely devoted to his duties, and had spent much time in the ward in which many of the fever patients had been placed. At the time of his attack, the patients were in a great measure concentrated in this single ward. Dr. F. had resided in the house but a short time, and was of a full robust habit of body and in excellent health.

About the first of July, 1836, he found himself growing gradually weaker and appetite declining; but although he was sensible of a general feeling of uneasiness, he had no local pain except a dull, deep-seated aching in the centre of the forehead. There was no disturbance of any of the digestive functions. On the 7th he felt better, and took much exercise, in the hope of escaping any serious illness.

On the 8th he went through his usual duties in the morning, but while in the ward, he was seized with a chill and nausea. These symptoms he referred to a furuncle situated on the right hand, between the finger and thumb. On the 9th, complained of cephalalgia, uneasiness at the stomach, and fever; he applied a poultice to his thumb, and took ten grains of calomel and one grain of ipecacuanha. Nausea and vomiting came on in an hour, and after drinking freely of warm water, he threw up a quantity of greenish bile. The next day he took a Seidlitz powder, which was followed by five evacuations. In the evening he attempted to resume his duties, but, from feebleness,

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discontinued them. From the 9th to the 14th the fever diminished every morning, but increased towards evening, so as to induce the patient to believe that he was attacked with ordinary remittent. He took the effervescing draught, and lived on light farinaceous diet.

14*th*. Restless during the night; almost no sleep; vomiting in the morning, but without pain. At 2, P. M., the pulse was full and rather forcible; skin hot and dry; tongue slightly furred; eyes injected; agitation and expression of general malaise. 20 leeches were applied to the abdomen, followed by fomentations; the punctures bled until the next morning. Neutral mixture, ℥ss. q. sec. h. cum ant. tart. gr. $\frac{1}{24}$. In the evening felt better, but was very weak; no pain. Pulse 96, compressible, but of moderate volume. Skin hot and dry. Bowels open frequently during the day; had six watery stools, without pain. The diarrhœa ceased after an injection containing thirty drops of laudanum. A few rose coloured spots, slightly elevated and disappearing on pressure, were scattered over the abdomen.

15*th*. Slept well; no cephalalgia, but dizziness on rising. Eyes suffused; no tinnitus or deafness; countenance anxious. Anorexia; one dejection. Tongue clammy, pale, coated with a whitish fur; thirst, dryness of the fauces and fœtor of the breath; a similar odour, but less marked, exhales from the skin; short, dry cough. Pulse 98; skin hot and dry; numerous spots of a light red colour, some slightly elevated and others on a level with the skin, disappear on pressure, and are scattered over the abdomen and extremities. Spt. mindereri. ℥ss. q. sec. h. Effervescing draught. Sponge surface with diluted solution of chloride of soda. Chloride of lime around the bed.

16*th*. Sleep disturbed by frightful dreams; same condition of the senses; intelligence and memory enfeebled. Eyes still suffused; purple flush of the face; less anorexia; tongue and thirst as yesterday. Abdomen a little tympanitic. Skin hot, but scarcely pungent. Petechiæ more numerous and of a more decided purple tinge than yesterday. Pulse 100, as yesterday. No stool until an enema containing a little chloride of lime was administered, when some consistent fæces were discharged. Urine reddish, cloudy. Same treatment; gruel.

17*th*. The petechiæ were larger and more livid on the arms. No sudamina or rose-coloured spots. Extreme prostration; anxious, dull expression of countenance; dizziness of sight; sensibility of skin natural; delirium and insomnia. Pulse 112. Sponge with the solution every hour. Poultice, with solution of chloride of soda, to the abdomen; other treatment as before. During the next night he slept none,

was very restless and delirious, and complained of much cephalalgia; cold applications were made to the head, sinapisms applied to the ankles, and gr. ½ of sulph. morph. given by one of his friends.

On the 18th the injection of the eyes and dulness of intellect had slightly increased, but he had slept for some hours after the morphia. Same treatment, adding two cold enemata.

19*th.* Petechiæ fading; skin less hot. Pulse 120, moderate volume. Memory more correct; abdominal functions natural; burning sensation at the stomach, after taking the acetate of ammonia. Substitute effervescing draught, and cold enema every three hours.

On the 20th, diarrhœa checked by an opiate enema. Mineral water instead of previous medicine. The skin had become more moist. Pulse less frequent.

On the 20th the pulse had fallen to 84 in the minute; the petechiæ finally disappeared, and the countenance assumed that haggard, wan appearance which succeeds the fever. The patient asks for food, which was now granted, with a little wine, and a few grains of the sulphate of quinine daily. The fever did not again return, although there was a slight diarrhœa; and after the convalescence was fairly established, a small but painful abscess formed in the perineum.

Remarks.—The duration of this case was nineteen days, from the beginning of the fever until convalescence. At the same time that Dr. F. was ill, we had another patient, an assistant in the ward, who was taken while in perfect health. The latter patient was treated more actively. One of the house physicians bled him largely before the fever had attained its maximum, and some local depletion was used. Still the case was more protracted and more severe than that of Dr. F. I do not mean to assert that the depletion aggravated the disease, but only that it was powerless in checking its progress. The cephalalgia, which was intense in the case alluded to, was relieved by the bleeding; but, judging from our experience, a less copious abstraction of blood, by means of a few cups applied to the nucha, would have answered the same purpose just as well, without diminishing the strength of the patient. There was no depletory treatment pursued in the case of Dr. F., with the exception of twenty leeches to the epigastrium, which he applied very early in the disease.

One of the peculiarities of case VII. was the unusually offensive odour exhaled from the skin. It was much more marked than in most of our cases; and although the patient was placed in a large and well ventilated chamber, the smell of the perspiration was extremely fœtid until the chlorides were most liberally used in different parts

of the room, in addition to sponging the surface. There was complete loss of recollection.

After the patient recovered, he retained no consciousness of any thing that had occurred subsequently to the first four or five days of his illness. The emaciation was very slight, until convalescence began. It probably did not occur before, from the capillary injection of the face. The skin became pale and sallow when the emaciation was decided.

Although no remedies which we prescribed had any effect in interrupting the course of the disease, still some of the results we obtained from them were both positive and gratifying. The sponging with the solution of the chloride of soda diminished the heat of the skin and lessened the fœtor; perhaps it counteracted the contagious power of the disease. The diarrhœa was controlled by a small quantity of laudanum, which was given so cautiously as not to render the cerebral symptoms materially worse, or to suppress entirely the evacuation from the bowels. But the greatest benefit was derived from the quinine and other tonics, which were given just as the fever ceased. The purgative which Dr. F. had taken at the beginning of the fever seemed to have no influence beyond its immediate operation.

The colleague of Dr. F., who was exposed to the contagion of the same ward, was likewise ill with the typhus, but in a very mild form. He had the petechiæ, the prostration, wandering intellect, and other symptoms, but all so mildly as to require little special treatment. I subjoin his case as an example of the slight varieties of the disease. It is, however, characteristic, and cannot be confounded with dothinenteritis.

Case VIII. Dr. J., one of the resident physicians, had been indisposed for three days before the attack was decided. In the morning he felt nearly well, except a slight languor, which did not prevent him from taking more than his usual amount of exercise. In the evening his appetite failed him, and there was some nausea. On the 6th of August he returned from town with increased fever, cephalalgia, pain in the back and limbs, hot, dry skin, and pulse of moderate volume and force. There was a white coat upon the tongue, anorexia, but no nausea or disturbance of the senses.

He took a few grains of blue pill, followed by rhubarb, the effervescing draught, ice water, cold applications to the head, foot-bath.

7th. Slept at intervals through the night. Cephalalgia continues, but the memory and intelligence are both natural. Senses undisturbed, but countenance dull. Pulse 85, smaller and weaker than on the 6th. Tongue moist, with a whitish fur. Some thirst, no de-

sire for food, constipation. Skin hot, dry, no well marked eruption. In the evening there was an increase of headache; pulse 64, irregular. A Seidlitz powder was given, which produced two evacuations; sinapisms were applied to the feet, and the cephalalgia diminished.

8th. Some irregular petechiæ on the abdomen and limbs. Skin generally a little injected, especially the face. Suffusion of the eyes, but senses nearly natural. Fœtor of perspiration distinct but moderate. Skin pungent, at intervals intensely hot. Insomnia, a little delirium in the night. Intelligence apparently but little impaired, still he is unable to reason on any subject, and cannot form a legible letter; but the prostration of strength does not materially extend to the larger muscles. Tongue moist, rosy. Although he has no appetite the thirst is slight. Abdomen a little tympanitic; no cough. Fomentations to the abdomen; sponging with the diluted chloride of soda; effervescing draught; gruel.

The pulse afterwards never rose above 80. The petechiæ disappeared completely on the 12th or 13th. Some subsultus for two or three days. No diarrhœa; return of appetite on the 14th; and on the 18th he was sufficiently well to commence a journey.

Remarks. During the whole of this case the countenance and the state of mind of the patient resembled the effect produced by an over dose of some of the narcotics; or as Dr. J. afterwards stated, it seemed to him that he was partially intoxicated. Combined with this peculiarity there was a constant effort on the part of the patient to disguise his symptoms, and affirm that he was perfectly well. This case could not have been mistaken for one of typhoid fever, because in a mild case of dothinenteritis we never observe such a marked preponderance of cerebral symptoms. When we add the eruption on the skin and the characteristic odour, the diagnosis becomes easy. Indeed these slight cases of typhus are quite as well marked as the more severe examples, and there is but little chance of erroneous judgment.

The next case illustrates the character which the fever assumed when no longer epidemic. It was still a dangerous disease, but in general was easily cured by placing the patient under favourable hygienic circumstances, aided by an appropriate plan of treatment.

Case IX. John ———, æt. 31, entered one of the medical wards on the 18th of April, 1837. He was employed as a nurse in the black ward for three weeks before his illness, although a white man. When attacked with the fever he was in good health and of temperate habits. For some years he has had no illness, except the venereal disease. On the 11th or 12th of April, felt unwell with cephalalgia,

dizziness, tinnitus in both ears, and confusion of sight. He had no chills nor pains in the loins. On the 13th felt extremely prostrated, but continued his work. No new phenomena appeared until the 15th, when, in addition to other symptoms, he had fever, slight cough, insomnia and sweating. Two stools daily.

April 19th. The patient has reddish hair and complexion; face generally injected; eyes suffused; slight cephalalgia; strength rather better. Intelligence clear, but some delirium in the night. Sweat with pungent odour. Since the preceding day an eruption has appeared over the whole surface of the body; it is in dull red spots, scarcely elevated above the surface of the skin, not disappearing on pressure, and about the size of a flea-bite. No sudamina; tongue reddish, rather dry, slightly coated. Fauces of a bright shining red colour. No tympanitis, or pain in the abdomen; thirst; anorexia; two dejections. Pulse 112, soft, easily compressed. Respiration high, 30 in the minute. Expectoration of thin watery saliva. Posteriorly the percussion is resonant in both sides, but less in the right than in the left lung. The respiration was feeble throughout the right lung, with much mucous rhonchus. *Spt. mindereri, lemonade, gruel, sponging with solution of chloride of soda.*

On the 20th diarrhœa, with four stools daily. Muttering delirium and increase of stupor. Some subsultus at the wrist, and spasms of the muscles of the face. No change in other symptoms. *Same treatment with the effervescing draught. For diet, gruel and a few spoonsful of beef tea.*

On the 21st the petechiæ were paler; the larger ones which at first resembled rose-coloured spots were now of a dull livid colour. Five dejections; pulse 120, soft, and compressible. Intelligence more clear since dry cups were applied to the nucha on the previous evening.

The intelligence and the pulse, as well as most symptoms, were not increased in severity until the 24th. The patient then became more dull; constant somnolence. Tongue dry, brownish, chapped, but not furred. The diarrhœa has ceased since two enemata given on the 23d, containing each ten drops of laudanum. Pulse 104, soft and trembling. Petechiæ very feeble. Soda water was substituted for the effervescing draught; and four ounces of wine made into whey were added to the other prescriptions.

On the 25th the appetite was better, and although there was a slight return of diarrhœa the other symptoms continued to improve. The pulse had fallen to 85 and 90 on the 26th, but there was no improvement in the cerebral symptoms. The tongue was very red and smooth,

cleaning in irregular patches. In addition to his other prescription, ten drops of the oil of turpentine were given every two hours. The next day there was a marked improvement of the intellect, with increased appetite. The pulse was 76, and soft. There were two or three stools daily, although the patient was decidedly convalescent. A few grains of sulphate of quinine were substituted for the other remedies on the 28th, and on the 3d of May the patient had regained his strength sufficiently to walk about the ward.

The duration of this case was but fourteen days, decidedly less than the average. It was treated as all ordinary cases were managed; no prescription of a more active nature than the spiritus mindereri and sponging with the solution of the chloride of soda was either requisite or appropriate until the accidental symptoms became sufficiently severe to demand a special treatment. Thus the diarrhœa was readily checked by the administration of a small dose of opium in enema, and did not return except in a slight degree.

The laudanum was given in a minimum dose, only ten drops in each enema: this was a precaution adopted to avoid increasing the cerebral symptoms by the narcotic effect of the opium, and the too sudden depression of the diarrhœa. Still there was a temporary increase of the stupor.

The spirits of turpentine were used with evident advantage; this remedy is administered at this stage of fever, when the tongue begins to clean, but is still smooth and shining, by Dr. Wood of this city.

Both this case and that of Dr. F. were complicated with diarrhœa. The occurrence of this symptom afforded an additional reason for their publication. Notwithstanding diarrhœa is so frequent in dothinenteritis, and when combined with the cerebral symptoms furnishes one of the most important differential characters, still in these cases of typhus, the peculiar eruption, the odour of the skin, and the intense cerebral symptoms removed all doubts.

Diagnosis.—We now approach an important and, in some respects, the most intricate part of our subject. The questions to be solved are, 1st. Whether there exists any essential diagnostic character between the typhus fever we are describing, and the typhoid fever of Paris, which is also not infrequent in America. 2nd. If the diagnosis between typhus and certain autumnal remittent fevers attended with extreme prostration, and other typhoid symptoms, be evident. Under the term typhoid we include various nervous symptoms detailed in the preceding pages, including the prostration and dulness of intellect. We of course use the term at present in its popular signification; and although it does not possess the greatest precision, still it is consecrated

by long usage, and it would be almost impossible to substitute another epithet equally expressive.

By diagnosis we mean the *comparison* of all the symptoms appreciable by us in disease. This comparison requires a careful examination of the symptoms presented during life, and of the phenomena observed after death, in such cases as terminate unfavourably. We do not base our classification of diseases solely upon their anatomical lesions, although these lesions are oftentimes more constant than any other single symptom whatever; but we group together lesions and symptoms whenever they occur together with sufficient frequency to admit this process of generalization.

In accordance with this signification of diagnosis, we admit the existence of phthisis previously to the formation of tuberculous matter in the same manner as we conceive the possibility of typhoid fever occurring without the characteristic lesion which gives to it the name dothinenteritis.

It is not only necessary to compare the symptoms and the pathological phenomena, but also to examine the succession of the symptoms and their relative intensity at different periods of the disease. It is necessary to attend to this order of symptoms even in those diseases in which, from the developement of the local signs, the diagnosis is easy, but in fevers about which so much confusion has existed, as in typhus fever, the most careful observation of all the points is absolutely essential. When we attempt to disentangle this confusion we must group our symptoms, and inquire if one series occurs in a sufficient number of cases for us to admit the succession of the phenomena as nearly, if not quite, constant. If this series does occur in the large majority of cases, the symptoms offer a relation which is sufficiently constant for us to admit them as constituting a distinct disease. If the most important symptoms be present, the absence of one or two, or even a large number of them, does not materially impair the diagnosis; nor does the accidental presence of some irregular symptom which is not usually met with, and does not form a link of the chain, render it uncertain.

We are the more desirous of insisting upon this distinction, as the remarks we made relative to this subject have evidently been misunderstood. The writer to whom we allude supposes that we limit the distinctive characters of the continued fevers purely to their anatomical lesions. We certainly desire to take a more extensive ground; and, from the examination of a large number of facts, we are fully convinced that a set of symptoms which characterize typhoid fever or dothinenteritis, are connected with a lesion of the glands of Peyer.

We have met with no exception; and the cases in which the symptoms are said to have been present without the lesion, are confessedly so few in number as to render them doubtful. At most, they prove only that the fever may pass in some rare instances through its course without its anatomical signs being developed. In the same manner tuberculous fever occasionally proves fatal before the deposit of the morbid substance from which its name is derived. Now this same lesion of the intestines is certainly so uncommon in other fevers, that at Philadelphia, out of eighteen or twenty cases of malignant remittent, and at least fifty of typhus, I have seen but one example in which the glands of the small intestine were at all affected, although they were always examined with scrupulous care. Even in that solitary instance the lesion was slight, confined to the mucous coat, and did not extend to the cellular substance, as in dothinenteritis.

On considering the symptoms of typhus and typhoid fevers, we observe that the latter disease is not confined to any particular season: it commonly attacks individuals of a particular age, and exposed to some unaccustomed mode of life. It sometimes occurs at the same time that an epidemic of autumnal remittent or of typhus exists. I have seen it under both these circumstances, but I have always observed symptoms which distinguished it from either. There could be no doubt of the correctness of the diagnosis, for it was not made in private practice, but in hospitals, where there were always a number of physicians and pupils present to correct and verify the facts.

These remarks are designed to show that the distinctive characters of these fevers are not such as in practice to allow them to be confounded together. Nor was it very difficult to acquire this facility of diagnosis, as all the better instructed students easily attained it. That the very early stages of typhus and typhoid fevers resemble each other is true, but in no greater degree than in the early stages of typhoid fever and small-pox, which I have known to be mistaken for each other by the most experienced observers. When the initial period of the fever is passed, the disease may be readily distinguished. Even very early, before the fever assumes its characteristic appearance, there is usually some fact which may throw light upon its nature.

1. Dothinenteritis is usually a sporadic disease, although it sometimes appears as a wide-spread epidemic. In the latter case the symptoms are so well marked, that these are never doubtful, except in a few of the earliest examples. Now, typhus is very rarely sporadic, and if scattering cases do occur, they are generally connected with an epidemic and follow it, as scattering cases of cholera were observed for a long time after the great epidemic of 1832.

2. Typhus is evidently very contagious; in the epidemic of 1836 it was quite as contagious as small-pox. I am fully convinced of its contagious nature from extensive observation as a physician to the hospital, and from the official visits and inquiries which I made as a member of the Board of Health. Dothinenteritis is certainly not contagious under ordinary circumstances, although in some epidemics we have strong reason to believe that it becomes so. It bears in this respect the same relation to typhus fever that measles does to small-pox.

3. The initial symptoms of the two affections chiefly differ in the greater stupor, dulness and prostration of typhus, which are in strong contrast to the moderate cephalalgia and disturbance of the senses in dothinenteritis.

Still there are now and then, perhaps once in twenty or thirty cases, some symptoms which are apparently common to the two forms of fever. Just as in the diagnosis of measles and scarlatina there is usually no difficulty, but we sometimes see cases of a hybrid character in which the most experienced physicians may be doubtful. In two or three cases out of three hundred the symptoms of typhus and typhoid fever seemed blended together; but these were slight forms of disease, which are necessarily less distinct than those of a more severe type. In practice, such cases are too rare to give rise to any difficulty.

The more severe cases of dothinenteritis sometimes resemble typhus fever very closely, but the resemblance is confined to the symptoms offered by the patient in the most aggravated period of the disease, and does not extend to the succession of symptoms. Indeed, if these cases of typhoid fever are examined at the early stages of the disease, they are certainly more characteristic than the slighter varieties; and although the symptoms occurring during a single day would lead us into error, the comparison of the successive changes will always guide us.

When the disease is completely formed, the characters on which the distinction between the two forms of fevers rest, are: 1. The suffusion of the eyes, which occurs in every case, or nearly every case of typhus fever, with the dusky-red aspect of the countenance. 2. The extreme stupor and inactivity of the mind even when positive delirium does not exist. 3. We also observe in typhus no constant abdominal symptom, and at first merely dulness on percussion and feebleness of respiration at the posterior surface of the lungs. 4. If to these symptoms be added the peculiar eruption of petechiæ, which is scarcely ever absent in whites, there remains hardly a possibility

of error. In the typhoid fever we consider as distinctive characters, the prostration, the somnolence, the slow developement of nervous symptoms, which are not so strongly marked as in typhus. The abdominal symptoms are tympanitis, pains in the abdomen, and diarrhœa. The sibilant rhonchus is heard in the chest; and lastly, there is an eruption of rose-coloured papulæ and s[illegible]amina upon the skin.

It is not necessary to insist upon the diagnosis between typhus and the ordinary autumnal remittents. The peculiar season at which these latter diseases originate, their progress and termination, all differ too widely from the symptoms of typhus to allow of error, without extreme inaccuracy of observation.

Some rare cases of pneumonia, especially when they occur in drunkards or patients whose constitution is enfeebled from other causes, resemble typhus in many particulars. Indeed the diagnosis is vastly difficult, were it not for the petechial eruption, as the stupor is sometimes considerable, and the suffusion of the face and eyes nearly as great as in typhus. If in these cases we are totally without knowledge of the early circumstances, we may occasionally mistake a case of pneumonia for typhus fever. But we could scarcely confound the pneumonia, which appears as a mere complication in typhus, with the original inflammation of the lungs. In some of these cases we derive less benefit than we could anticipate from the physical signs, because pneumonia may be present and be readily distinguished by auscultation, but at the same time be strictly secondary. Neither bronchitis nor angina resemble typhus, unless they occur as an epidemic.

Prognosis.—We inferred with considerable certainty that a patient would recover who was admitted at the early stages of the affection, and whose constitution was not broken down by previous diseases or excesses. The event generally justified this opinion, as the results of the treatment will prove. Typhus, therefore, is not a very mortal disorder, although always dangerous. It is scarcely more fatal than dothinenteritis or pneumonia. When the stupor was extreme, so severe as almost to amount to coma, the prognosis was nearly always fatal; but if the stupor could be diminished, although only for a short time, by rousing the patient or addressing him in a loud tone of voice, the fever might be expected to terminate favourably. We could not trace a close connexion between the degree of subsultus, or the alteration of the senses or sensibility, and the danger of the disease. The affection of the lungs was generally moderate, and was therefore omitted in our calculations; still, decided pneumonia became a grave complication, and evidently proved fatal to one of our patients. The prognosis was extremely unfavourable if the prostration, which is so

frequent in the latter stages of the disease, happened to occur at the beginning, or during its course, before the complete abatement of the fever.

The prognosis was different at various periods of the epidemic. The same rule extended to typhus as to cholera, and other epidemics of malignant disease. At the beginning the cerebral symptoms were more violent than they were afterwards, and our prognosis was grave, in accordance with the great mortality which then occurred. But afterwards, when the fever was less extended, it also became a less mortal disease, and we anticipated the recovery of the patient in nearly every case. This rule of prognosis should therefore not be overlooked by those who may witness similar epidemics; if they are limited and short, the success of treatment will seem very great; but if their form be more violent, a fatal termination may be expected in a considerable proportion of patients.

Treatment.—We are now approaching a most important part of our subject, which includes many different questions. For therapeutics, far from being the most easily settled of those points in medicine which may seem doubtful, is more encompassed with difficulties than any subject connected with the science. After the most patient and candid investigation, pursued without the smallest desire of promulgating any opinion which has not been fully sanctioned, a positive conclusion is frequently not attained; and if such difficulties are experienced by men who are familiar with the history of disease and accustomed to the action of remedies, what shall we think of the pretender who dabbles in these matters without a knowledge of the diseased actions, and still less of the modifications which remedies may cause in the economy? We are therefore doubtful of the results which promise the most success, and we utterly reject all statements not based upon the foundation of close observation and sacred adherence to truth.

To examine our cases with the slightest prospect of attaining any important results, it is necessary to propose two distinct questions. *First*, what has been the effect of a particular remedy or plan of treatment in diminishing the mortality, shortening the duration or mitigating the severity of the disease, considered as a whole. *Secondly*, we must inquire what influence individual remedies may have in diminishing the violence of certain symptoms which increase the danger and the suffering of the patient.

The first question is always of difficult solution, especially with regard to the exanthemata, and typhus and typhoid fevers; all of which seem to run a determinate course. After the disease is formed, this

course cannot be much shortened by art. The materials we possess will not prove sufficient to clear up this matter; complete and accurate results could not possibly be attained, unless the epidemic should again return with equal intensity. The different periods of the epidemic offer such a variety in degree, that we cannot with entire accuracy appreciate the effect of remedies upon the course and termination of the disease; but we can approximate to the truth more or less nearly, and must be governed by probabilities. If the epidemic of typhus should reappear, physicians might readily obtain the solution of most of the therapeutic problems which would arise; but they should begin with a definite knowledge of the peculiarities of the disease, and of the effects of the course of treatment already pursued.

The second question is a more simple one, although we regard it as scarcely less important. Until we discover some means by which our power of arresting or diminishing the intensity of morbid phenomena is vastly increased, we shall probably be compelled to resort to such remedies as diminish the severity of particular symptoms, and thereby materially increase the comfort of the patient. In some instances even more important effects may be produced by these remedies; for, although the intensity of the diseased action attendant upon fever or other general diseases may not be sufficient to destroy the patient, he may still fall a victim to the prostration produced by excessive secretions, or he may die from the functional disorder of particular organs. By watchfulness, and by checking the symptoms, such a termination may often be avoided.

Besides these points of treatment, we should observe some general precautions which are more or less applicable to most cases of disease, but are especially requisite in typhus fever. These precautions are chiefly of a hygienic character; and as their utility is not questionable, we may begin with them.

1. That typhus is clearly a contagious disease, was fully proven in the epidemic of 1836 at Philadelphia. Its contagious property is also admitted by most authors who have accurately observed the same disease. We must therefore immediately take precautions for the complete separation of typhus patients from those affected with other diseases. If the number of typhus cases be small, these precautions need not be so strictly enforced; and may be limited to the free ventilation of the ward and the preservation of absolute cleanliness. The contagious principle does not extend far from the individual, and is readily dissipated by free ventilation. The chlorides of lime and soda were used freely about the bed of the patient; and although they certainly did not prove substitutes for fresh air, they were useful,

and the chlorine in a great degree neutralized the offensive exhalation from the patients. We need not add that the friends of the patient should be excluded from his apartment, except as many as may be required for the necessary services to the sick. This exclusion is necessary to prevent the propagation of the disease, and preserve the air of the room in purity.

In practice we should remember these precautions; and although at the time, typhus may not exist, practitioners throughout the country should recollect this necessity. For partial epidemics of petechial typhus will undoubtedly again occur; and if they are not managed with the necessary care, the disease may extend to a large number of patients who would otherwise have escaped. We are the more earnest in calling the attention of the profession to this subject, as the disputes relative to the contagion of yellow fever has certainly unsettled the minds of many physicians on the subject of contagion in febrile diseases. But as we possess clear demonstrative evidence of the direct contagion of petechial typhus, it would be both absurd and criminal to neglect the appropriate hygienic measures.*

2. Of the influence of particular remedies upon the general course of the disease, and on individual symptoms.

Blood-letting was not employed, except by cups, in the immense majority of our patients. We abstained from it at the beginning of the epidemic, because our patients all entered at an advanced period of the disease, when it was totally unnecessary, and, from their extreme prostration, would probably have been destructive. About the middle and latter period of the epidemic many individuals engaged in various duties in the hospital, who were previously in perfect health, were taken ill with the fever, and afforded us an opportunity of testing the effect of blood-letting. It did not avert the fever in a single case. Indeed the patient who was bled most largely, (℥xx.) on the second or third day, had a protracted and severe attack of the fever. He was a nurse, in very good health, and therefore offered a favourable case for this treatment. At an earlier period of the epidemic we had also used blood-letting in a stout mulatto, taken ill in the hospital, where he was under treatment for a slight venereal disease. I was present at the bleeding, and found that he fainted after the abstraction of five or six ounces. The blood was dark and soft. This patient died. A third patient, who entered on the third day of the

* A pupil of mine, from North Carolina, informed me that he had witnessed a similar fever amongst the negroes. It seemed to be contagious; and from the absolute disregard of cleanliness and the crowded state of the negro cabins, it frequently spread extensively.

disease, was bled to faintness, (℥xvj.) he was relieved of his headache, and in some degree of the stupor. But headache and the more intense cerebral symptoms, as stupor and delirium, returned, and the patient was not convalescent until the 26th day. A fourth patient, in whom the fever was complicated with bronchitis, was bled on the seventh day, and again on the 9th, besides one or two applications of cups. The bronchitis seemed benefitted and the cerebral symptoms diminished, but returned the next day as severely as before. We did not resort to bleeding in many cases occurring amongst the men, as the number of admissions at the beginning of the disease was not very great, and we always regarded the advanced state of the fever, or extreme prostration of the patient at the commencement, as sufficient reasons for abstaining from venesection.

The general results obtained from bleeding in the cases of women, differed but little from those observed in the men's wards. Bleeding never arrested the disease; nor did it apparently abridge its course. There is another fact which should make us the less anxious to resort to blood-letting in most cases. It was practicable only when the disease was of slight or moderate severity. The more violent cases were all attended with extreme prostration, so that the patients were exhausted after very small abstractions of blood.

The advantages of blood-letting were these. In the earliest stages, that is, before the eruption of the petechiæ, there was usually diminution of the cephalalgia, of the disturbance of the nervous system, and of the general feeling of uneasiness experienced by the patient. But the pulse was slightly affected, and the influence of the bleeding upon the heat and dryness of the skin was not very great. Now these advantages are sufficient to induce us to admit the utility of venesection in cases of typhus fever which presented a force and frequency of pulse above the average, and symptoms of cerebral or thoracic inflammation, if they are seen by the physician during the course of the first week. After that period blood-letting becomes a doubtful remedy, and, as a general rule, should be abandoned. Venesection is inadmissible from the very beginning in individuals who react with difficulty, and seem prostrated by the direct impression of the disease.

We are not yet satisfied as to the power of blood-letting in preventing the formation of those internal congestions which are so frequent in the latter stages of typhus. This explanation of its utility, which is given by some of the British practitioners, appears to depend more on theory than on practical observation.

Local blood-letting is obviously free from many of the disadvantages of venesection. As in most cases but a few ounces of blood are

taken, it produces but little exhaustion, and may therefore be prescribed without hesitation in many cases in which general bleeding is inadmissible. Still copious local bleeding will greatly enfeeble patients, and should not be resorted to, unless there is a reasonable prospect of advantage. We consider it as a remedy of considerable utility, as in a majority of cases the patients were decidedly relieved after cups to the nucha. The cupping was most efficacious when directed in the earlier period of the disease; it was nearly without effect in the middle stage, and was positively injurious when the fever began to decline.

Dry cups were used during the epidemic still more frequently than the scarified. They were at first applied to the nucha, and afterwards were often placed upon different parts of the spine, especially between the shoulders. We were at first disposed to undervalue them; but as we never observed any bad effects, except the fatigue they necessarily caused, we afterwards used them less rarely, and considered dry cupping as one of our most frequent prescriptions. The dry cups were applied when the stupor and injection of the eyes were well marked, although the excitement of the pulse was moderate or below the natural standard. The stupor was evidently lessened after the cupping in at least half the cases, and the effect seemed to a certain extent beneficial in about one half the remainder. The nervous symptoms, as subsultus and insomnia, were materially diminished after the cups in nearly every instance. At times, this diminution was temporary, and in a short time the symptoms returned to their former intensity. But in other cases the sleep became sound, and the subsultus ceased for a number of hours.

Dry cups, applied in considerable numbers, and left upon the nape of the neck and between the shoulders for twenty minutes or half an hour, has always seemed to me a more powerful remedy in nervous functional derangement not attended with inflammation, than scarified cups. I have used them largely in the treatment of the apoplectic symptoms of malignant intermittent with the best effects, and resort to them with confidence as one of our most powerful means of controlling disordered nervous action.

Blisters to the nucha were used during the height of the epidemic in a considerable number of patients. In a few cases blisters were also applied to the thighs, but it was chiefly in desperate cases where no treatment could avail much. The effects of blisters to the back of the neck were an obvious diminution of the cerebral symptoms in only one case in six, a doubtful influence upon them in two, and in the remaining three they were nugatory. No increase of cerebral symptoms followed the blisters in any case. Sloughing never occurred,

although it is frequent in dothinenteritis; and the blistered surface very rarely became ulcerated, or offered any peculiar appearance. From these meagre results we would infer that blisters are scarcely to be ranked among the remedies of petechial typhus.

Sinapisms were a more efficient remedy than blisters. They were of great and undoubted advantage in the stage of prostration which occurs at the decline of the fever, and certainly contributed to save the lives of several of our patients. We also found them useful in diminishing the stupor and prostration during the disease, as well as in reanimating the strength of the patients who were brought to the hospital, exhausted from neglect and a fatiguing ride from a distant part of the town. But if the fever was high and the heat of the skin considerable, sinapisms were vastly less effectual than when the skin was cool, and the patient seemed sinking from mere exhaustion.

Stimulating liniments, as the spirits of turpentine, alone, or combined with soap liniment, or with the decoction of cantharides, were used in particular states of the system only. We found them beneficial at the period of prostration, after the fever had subsided, and occasionally continued their application for several hours. These liniments were also applied when the patients were much exhausted from the fatigue of their journey. In the majority of cases they were neither necessary nor indicated.

Dry heat, by means of warm sand, bran, &c., was directed whenever the temperature of the extremities sank much below the normal standard; it was designed simply to effect a temporary purpose.

Sponging with *tepid or cool water* was a remedy adopted very early in the epidemic, and was more constantly directed after experience had convinced us of its great utility. We occasionally added the chlorides or some of the alkalies to the water, for purposes already mentioned, but most frequently we used pure water. The water was applied cold, when the temperature of the surface was above the natural heat of the body, and at the same time was dry; but if a slight perspiration had commenced, it was always more prudent to employ a warmer water, as we are accustomed to do in other febrile diseases. We found that by frequent sponging we could regulate the heat of the surface with great ease, and in some degree could moderate the cerebral symptoms.

Cold cloths were applied to the head, or even pounded ice, but with no influence upon the disease, and very little upon the delirium, except when it was noisy and incoherent, as it is in ordinary inflammatory affections of the membranes of the brain. In such cases the application of cold was useful, and occasionally suspended the symp-

toms. The cephalalgia, when intense, was very generally diminished after the use of this remedy, and a constant insomnia was replaced by sound and refreshing sleep.

The influence of internal remedies is more difficult to appreciate than that of external treatment, and their effects upon the general course of the disease are involved in so much obscurity, that we cannot venture to attempt an accurate analysis of them. The reader will, no doubt, in great part, agree with us that in a disease of this nature, we cannot hope that remedies should be able to effect a sudden change in the morbid actions, and a restoration to health, after it is once completely formed.

Emetics. These remedies are recommended by many authors at the commencement of severe epidemic diseases. We used them in a large number of cases. It was not with the intention of removing a morbid secretion or of acting upon the liver, for both stomach and liver were in a state of perfect integrity; but we hoped to produce a shock which might change the morbid actions of the economy, and thus check the fever. With this view an emetic of ipecacuanha was given to several patients at the very commencement of the fever, before the eruption of petechiæ, and even before much stupor occurred; in no instance were we convinced that the disease was cut short. It is true that amongst the patients thus treated there were two or three slight cases, in which the fever was not completely developed, but such attacks occur with and without the emetic treatment; and amongst the whole series of cases treated in this manner, there were several which were excessively severe. From these doubtful effects of the emetic treatment, we would hesitate as to its use; still, if the case should be slight, and any reason should exist for giving an emetic, there is no objection to the ipecacuanha. In severe fever it might be dangerous.

Purgatives are remedies so much in vogue with British and American practitioners, that we may readily imagine that they would be administered in typhus fever. When I visited Edinburgh in 1831, saline purgatives, with tartarized antimony, were the common medicines given in an epidemic of fever, which, I believe, was mild petechial typhus. We administered purgatives in the epidemic of 1836, and although they seemed to relieve some unpleasant feelings of the abdomen, if the patients were purged very early in the disease, there was never any immediate cessation of symptoms, or even a well-marked diminution of the disorder of the cerebral or abdominal organs. We did not persevere in their employment, so that we cannot state what was evidently their effect; but in a general way we can

say that they seem to us to be classed amongst the doubtful remedies, which may be used in future epidemics, if no express contraindication should exist. We are well aware of the great importance attached to purgatives in fevers of this kind, and we do not deny that they may have been most useful in the hands of many practitioners; we only state that in our hands they were not so useful as to justify us in classing them amongst the remedies of undoubted power. They are harmless in the earlier stages of the disease, when the strength of the patient is not much exhausted.

Diaphoretics were used by us habitually. We were influenced by two reasons; one, to relieve the heat of the skin by perspiration, and another because these remedies from their comparative feeble powers, are appropriately given at that period of the disease when we are in doubt whether to act or to trust the cure entirely to the efforts of nature. We used various diaphoretics, the effervescing draught, the neutral mixture, and still more frequently the acetate of ammonia. These remedies never produced other inconvenience than a slight catharsis in a few cases. The acetate of ammonia very rarely acted as a laxative, while it possesses mild stimulating powers, and is therefore one of the most appropriate of the class. From the very nature of these remedies it is difficult to ascertain if they possessed much power over the disease: speaking from our general impressions we should state that they diminished the intensity of the fever, and concurred with the sponging in reducing the temperature. From these probable advantages, added to their freedom from deleterious properties, we employed them in a large majority of our cases.

Tonics were used by us in many stages of the disease. They were of undoubted and great utility towards the latter period of the fever, when the pulse fell in frequency and force, and the heat of the skin diminished. Our notes generally agree in this respect, and prove that tonics not only exercised a gradual and permanent influence upon the appetite and strength of the patient, but that they produced an immediate impression. The improvement was sometimes so rapid, that it was very obvious from one day to the next, and frequently produced a decided increase of strength and appetite. We are convinced that the good resulting to our patients from this class of remedies was amongst the most gratifying results of our treatment. The patients who have just escaped the violence of the fever, require a supporting treatment, or the mortality amongst them will be very considerable.

The tonic most employed was the sulphate of quinine, given in solution; usually about twelve grains in twenty-four hours.

We preferred it for the obvious advantages of its small bulk, and easy solubility. Huxham's compound tincture of bark was recommended by Dr. Parrish as a good tonic for the earlier as well as the later stages of typhus fever. We used it in numerous cases, and were pleased with its effects; although there were certainly at times, some disadvantages following its employment. It was irritating to the stomach, and seemed occasionally to increase the fever. The infusion or decoction of cinchona, especially if acidulated with the elixir of vitriol, seems to us a very appropriate form of administration, although we employed it but rarely. The other vegetable tonics were occasionally directed, but their effects offered nothing peculiar.

Alcoholic preparations were employed very liberally at the beginning of the epidemic, more so than we afterwards thought necessary. This difference arose partly from the extreme prostration of the patients, who all entered at an advanced period of the disease, after much suffering from neglect and privation, partly from the greater depression of strength and of the powers of life which characterized the early periods of the epidemic; and in some measure we were influenced by the advice of practitioners who had witnessed previous epidemics of this nature at Philadelphia, and had found the stimulating practice most useful. The stimulant we usually employed was wine, rarely brandy; in a few cases porter was given. We find it difficult to estimate the precise effects of wine, during the middle periods of the disease, although the strength of the patients was evidently increased, and the muttering delirium diminished. At the early and at the latter stages of the fever there was no doubt as to the evident benefit derived from wine.

We used it in the early stage only under peculiar circumstances. When the patient was already in feeble health, the attack of typhus fever produced extreme prostration, and sometimes proved quickly fatal, without the developement of the ordinary febrile reaction. These cases were similar to some varieties of measles, in which the eruption is indistinct; but the general symptoms are marked by extreme prostration. Under such circumstances wine was given with immense advantage, either simply diluted with water or made into whey.

In the latter stage of fever, wine, porter, and in a few cases even brandy, were given with much benefit. It is difficult to conceive the extreme prostration in which our patients were left after a severe attack of fever. The skin is usually cool and the pulse weak and fluttering, but there is still muttering delirium and great feebleness. Under these circumstances, wine, combined with quinine, and a nu-

tritious diet, produced an effect which was almost magical. The diet and tonics were essential in increasing the permanent strength of the patient, but the immediate benefit derived from the wine was much more obvious.

The quantity of wine given in twenty-four hours, varied from four to sixteen ounces. It was generally from six to eight ounces. Practitioners have remarked that a moderate dose of wine is capable of producing all the good effects which can result from it. In our observations a similar result was obtained, and we rarely exceeded eight ounces daily, except as a temporary prescription to obviate extreme prostration. The quantity given with that object was not limited, but was increased until the strength of the patient improved. The quality of the wine could not be much regarded in hospital practice, but in private life the strong and purer sherries are preferable. We observed no ill effects from the wine, in the earlier period of the epidemic; if any resulted, they were so blended with the symptoms that we could not separately examine them; but where the fever was higher and the prostration less, wine became less useful. We therefore restricted its employment to the periods of prostration, when it was indispensably necessary, The less stimulating diaphoretics were substituted with advantage during the middle periods of the fever. Our observations may account for the great discrepancy of opinion which exists amongst physicians as to the advantages resulting from the treatment of typhus fevers by the free use of wine. Those who recommend wine very early in the fever, have met with severe cases attended with extreme depression, and have almost always given wine with some advantage. If it did not in itself prove successful in entirely restoring the strength of the patient and arresting the disease, it produced a temporary abatement of some of the more prominent symptoms. It does no mischief except in those cases in which the circulation in the brain is extremely active or there is acute inflammation of the lungs. If care be taken to refrain from wine in the two last mentioned circumstances, no inconvenience will result from its use, and in many stages of typhus fever it will be found nearly indispensable.

The *diffusible stimulants*, as ether and Hoffman's anodyne, were used under particular circumstances, chiefly with a view to stimulate the circulation and enable the patient to recover from a temporary depression of strength. The Hoffman's anodyne was commonly given combined with acetate of ammonia. Some of these stimulants was directed as a frequent prescription.

The *carbonate of ammonia* is a remedy very frequently used in the

treatment of typhus. We employed it in accordance with the common usage; especially at the commencement of the disease. Although we are perfectly aware of its power as a rapid and effectual stimulant, particularly when the fever is complicated with a disease of the respiratory organs, we were rather disappointed in its effects. It was irregular in its action, and in the dull muttering delirium of typhus seemed totally without power. In the latter period of the epidemic we therefore used it less frequently, although we did not entirely lay it aside.

Camphor was certainly amongst the most useful and powerful of our remedies. We used it largely in the severe cases, especially those in which the ataxic nervous symptoms were very marked, and we had no reason to repent its employment. In general there was a marked diminution of some of the most prominent and harassing symptoms. We gave the camphor in emulsion in doses of five grains every two hours, and in enema in doses of a scruple. The immediate effect was the lessening of the subsultus and tremors, for which it was chiefly administered, and sometimes the diminution of delirium. In some cases we possessed a complete control over the subsultus, which was immediately checked by an injection containing a scruple of camphor. It would cease for some hours, but afterwards return nearly with its former severity. Still it was a useful palliative, and like most remedies of its class, acted as a useful balance wheel in preserving the harmony of the system until the disease had passed through its natural course. The camphor frequently acted powerfully as an anodyne when sleep had been interrupted by the previous disturbance of the nervous system.

Opium and its preparations were used by us in a considerable number of cases. Dr. Pennock was the most pleased with their effects. When the insomnia had been tormenting and incessant, and the patient was exhausted by agitation and nervous restlessness, a small dose of morphia would generally calm the agitation and procure sleep. This advantage was so great, that we were induced to give opiates in cases which were opposed to our ordinary notions of the proper condition of the system for their employment. We observed no inconvenience from them, and found the morphia occasionally of so much benefit that we should class it amongst the decidedly useful remedies. It is not a remedy which should be used in large doses; as patients with typhus are certainly more readily affected by its narcotic properties than they are in any other disease; an eighth or a sixth of a grain was the usual dose, and was enough to procure sleep. Opiates are ob-

viously improper when there is much dulness of intellect, attended with great suffusion of the eyes and countenance.

The treatment which was usually pursued by us, may be learned from a study of the remedies already indicated; but as their separate examination tends to break up the connexion of this description, we will state in a few words what treatment we thought preferable under ordinary circumstances. At the beginning local blood-letting will diminish the cephalalgia or other local uneasiness which may chance to exist; general bleeding is to be used only as an occasional treatment: afterwards the patient should be kept upon a mild farinaceous diet, with a little animal broth. The heat of the surface is to be moderated by cool or tepid sponging, preferring a solution of chloride of soda to simple water. The effervescing draught and other mild beverages may be taken as a common drink, more stimulating diaphoretics if the strength of the patient should fail; wine and other stimulants should be given when the prostration is great; and quinine, with a concentrated diet, should be added when the fever subsides, and the skin becomes cool. Emetics, purgatives and blisters were found useful occasional prescriptions, adapted to the removal of particular states of the system, but did not answer our expectations as a general method of treatment.

The mortality amongst the cases which were treated by us from the beginning was not great; but the total loss of patients admitted at advanced periods of the disease, many of whom were moribund, was very considerable, about one in three. The best means of judging is to examine the mortality amongst the officers and servants of the house who happened to be taken with fever while in good or tolerable health. Of these patients two died, making about one in seven. Of the two who died one was paralytic, enfeebled and advanced in years; the other was a young woman in good health, but was affected at the beginning of the epidemic, when the disease was very severe, and our notions of the treatment were not so definite as they afterwards became. The case of this patient is reported in the first part of this article. The mortality is not then great, under favourable circumstances; but is very large when neglect, bad food, crowded apartments, a broken constitution, and above all, a severe form of the epidemic are combined.

The duration of this disease, after it was fully formed, varied from eleven to twenty-eight days. In a few cases it was protracted for a still longer time, but these cases were complicated with an accidental lesion, developed during the course of the fever, and lasting after the latter had completely disappeared. The average duration, exclu-

sive of the cases which terminated in death or in sloughing of the depending parts, or disease of the chest, was nineteen and a half days. About one half the cases terminated at or very near the twentieth day, (from 19th to 21st inclusive.) In the cases which lasted less than the average time, most of the patients were below the age of twenty years, so that youth not only diminishes the danger of typhus but shortens its duration. After twenty the duration of the disease did not seem to depend upon the age of the patient.

The duration of the cases which entered at an early period of the disease was less than that of those admitted after the first week. Whether the longer duration of the latter cases depended upon the want of care and previous bad treatment, or whether the cases admitted at the later periods of the fever were selected in consequence of their not recovering so rapidly as other patients, cannot be rigorously demonstrated. We believe much of the difference arose from the absence of medical attention and the necessary comforts of life, as many of these protracted cases were evidently slight, but they were nevertheless prolonged beyond the average duration.

The general conclusions with the respect to the power of treatment, are, that though it cannot cut short the petechial typhus after the disease is formed, it may shorten the duration, diminish the mortality, and mitigate the severity of the symptoms.

Note. We omitted mentioning in its proper place, that suppuration of the lymphatic glands was very rare—not exceeding one in a hundred cases.

Art. II. *An Experimental Examination into the opinions of Sir Charles Bell relative to the anatomical and physiological characters of the Spinal Marrow.* By Henry H. Smith, M. D., resident physician in the Pennsylvania Hospital.

Considering the great prevalence of neuralgic affections at the present day, and the importance of the spinal marrow to the general economy, it is a matter of surprise that its functions, character, and physical relations should have attracted so small a share of the attention of physiologists. Intimately connected with the brain, and sending large and important nerves to a great portion of the human body, its action ought most undoubtedly to be thoroughly understood, not only by the physiologist, but also by every one who attempts the cure of nervous diseases.

But though it thus merits attentive examination, comparatively few experiments have been made in regard to its influence over the animal economy; and these have been so generally considered as proving conclusively the views of the experimenter, that few have either doubted or repeated them. Believing that the experiments of Sir Charles Bell on this subject demanded a closer examination, particularly as many of them seemed to be based on somewhat supposititious grounds, I repeated a number, and especially those made to prove the connexion of the middle column with the function of respiration.

In order to conduct my examination in as impartial a manner as possible, I in each instance pursued the following order: first, to read only the experiment as stated by the author; and second, to repeat it as nearly as possible in the same way; always after the first operation dissecting the portion operated on, so as to make myself sure of its correctness.

As Sir Charles, however, merely mentions the fact of his having made a certain experiment, without stating the manner in which it was performed, I was of course left entirely to my own method of operating; and it is with the view of enabling others to judge of its correctness, that many things have been stated minutely which might otherwise have been omitted.

Commencing with his experiments on the anterior and posterior columns of the spinal marrow, I found, after having repeated them several times in various ways, that they all tended to confirm the opinion which he had expressed of their function.

Passing over, therefore, the detail of these experiments, (which, as they proved nothing new, might not repay the perusal,) let us proceed to examine the grounds on which he has founded his opinion of the existence of a middle column.

In the first place, in speaking of the spinal marrow, he remarks, "that it is divided into three portions, to each of which I ascribe a different function, viz. the anterior for motion, the posterior for sensation, and the middle for respiration; the head of which columns is the medulla oblongata." He then goes on to prove the existence of the anterior and posterior ones, but says *nothing* of the middle column. He neither defines its boundaries nor furnishes any evidence of its existence, unless indeed we receive as such, an assertion of its being there according to his views of the case. Now, to say the least, it is a singular way of proving a case, to say that "it is so according to my views;" particularly when those views are entirely new, and differ widely from those entertained by many others.

To be convinced of the truth of this last remark, let us refer for an

instant to the description of the spinal marrow given by one who is generally admitted to be extremely accurate in his observations, and we shall there find that there is a portion which might constitute a middle column, but that the fissures defining it are indistinct, and also that this portion does not extend the whole length of the spinal cord, but stops short in the upper part of the dorsal vertebræ.*

But the column spoken of by Sir Charles Bell is mentioned in connexion with others which do extend its whole length; and as nothing is said to prove that it differs from them in any respect, we must suppose that its termination is the same as theirs.

Admitting, then, for the sake of argument, that it does, ought we not to find something like a nervous root arising from it? If not, how shall we account for its influence over respiration?

But no one as yet has pretended to see more than *two* roots to a spinal nerve. Indeed Sir Charles himself never could have imagined such to be the case, for one of the reasons which he gives to prove that the fifth of the encephalon corresponds with the spinal nerves, is the fact of its having but two roots.

If, however, we suppose that when he referred to a middle column he meant the one spoken of by Professor Horner, then in what way, it may be asked, are we to account for its control over the abdominal muscles in respiration; since, by this column stopping short, as has been shown, at the upper dorsal vertebræ, no nerves could be sent off so low down as the abdominal muscles, and of course they could not exert any influence on respiration.

If, again, it be said that these muscles are influenced by the anterior or posterior cords, what necessity is there, it may be asked, for the middle column extending even as far as the dorsal vertebræ? Or what occasion is there for any middle portion, if its function is to be performed by other parts?

There certainly is none; and it is believed that demonstration will show that the abdominal and intercostal muscles, as far as they are affected by any nervous power, receive it through the anterior cord and roots. And it is also suggested that the appearance of this middle cord at the upper dorsal vertebræ, is caused by one of those numerous fissures which are seen all over the spinal cord, but which is there rendered more distinct by the enlargement caused by the distribution of the nerves of the axilla.

Without, however, arguing the matter further, I would here refer to a passage in Sir Charles Bell's paper "on the nerves of respiration,"

* Horner's Anatomy.

which must satisfy every one of the looseness of his *anatomical* description and the good reason there is to doubt the correctness of his observations, at least without further proof. In speaking of the middle column, he remarks that—

"From this tract on the side of the medulla oblongata, arise in succession from above downwards, the fourth, portio dura, glosso-pharyngeal, par vagum, nervus ad par vagum accessorius, and, as I imagine, the phrenic and external respiratory nerves."

But observations made every day show that—

"The patheticus arises from the upper anterior face of the valve of the brain, just below the testes, and is distributed to *the muscles of the eye.*

"That the portio dura arises from the medulla oblongata at the most superior part of the corpus restiforme, where the latter joins the tuber annulare, and is distributed on the muscles and skin of the head.

"That the glosso-pharyngeal arises from the posterior cord of the medulla oblongata, and its general distribution is to the tongue and pharynx.

"That the par vagum arises from the corpus restiforme, just behind or on the borders of the fissure separating it from the corpus olivare, and its distribution is to the organs of respiration and to the stomach.

"That the accessory nerve arises from the posterior fasciculus of the medulla oblongata, and also from the *posterior fasciculus* of the *medulla spinalis*, sometimes as low down as the seventh cervical vertebra."*

Instead, then, of these nerves arising from the continuation of his middle column, it appears that not one of them has that origin; for the continuation of this column on the medulla oblongata would form the corpora olivaria, (the corpora pyramidalia and corpus restiforme being formed by the anterior and posterior columns,) and from this body ought we therefore to see them arising, while on the contrary they do not do so, but in place of it proceed chiefly from the corpus restiforme!

Following up Sir C. Bell's remarks, we next find that he thinks "it is probable" that the branches of the intercostal and lumbar nerves which influence the intercostal and abdominal muscles in respiration, are derived from a continuation of the same column or slip of medullary matter downwards; and that the nerves called phrenic and external respiratory, though coming out with the cervical nerves, may in all probability take their origin from the same column. Now it has been shown that when the existence of this column has been admitted, it was distinctly stated that it stopped at the upper dorsal vertebra: why, then, Sir Charles should think it probable that it extends downwards, when demonstration showed it did not, is unaccountable. And the probability of the phrenic nerve arising from the same tract, when it

* Horner's Anatomy.

is constantly seen to arise from the anterior fasciculus of the second or third cervical nerves, seems even a more singular idea than the other.

Relinquishing argument altogether, I shall now refer to experiments, (which in reality is the only sure test of the correctness of an opinion,) premising the grounds on which I have gone in performing them; these were,—

1st. That if the middle column influences the respiratory muscles of the trunk and extends the whole length of the spinal marrow, the division of *it* alone, without the injury of the other columns, ought to affect respiration.

2nd. That if it extends only part of the length of the spinal cord, the division of *it* at any point should put an end to the action of the respiratory muscles below that point.

3d. That if the respiratory principle resides in the medulla oblongata, (as proved repeatedly,) and is transmitted to the muscles through the anterior column or roots of the nerves, the division of *them* ought to interrupt the action of all the muscles concerned in moving the chest.

4th. That if the abdominal and intercostal muscles *are* influenced by the middle column, the division of the roots of the second, third or fourth cervical nerves ought not to affect their action, but only destroy that of the diaphragm.

For the proof of these propositions I refer to the following experiments.

Experiment 1*st.*—A good sized kitten was struck lightly on the head so as to stun it slightly, but without affecting its respiration. The skin was then dissected back, and the muscles removed from the spinous process of the sixth, seventh and eighth dorsal vertebræ. The points of the scissors being then carefully introduced, the processes were removed and the canal opened for about two inches. The cord was now raised upon the forceps, and a thin, flat instrument, somewhat similar to a gum-lancet, introduced on the right side at the lateral fissure, and carried through to the opposite side. The action of the abdominal muscles, as well as the intercostals, were closely watched by a friend during this operation, but no change in their movements was visible. The instruments being withdrawn, was again introduced with its flat side to the sacrum, and pushed through so as to separate for the space of two lines the anterior from the posterior columns, but without having any effect on the muscles of respiration. By this mode of operating the anterior column was of course separated from the posterior, but remained otherwise uninjured; while

at the same time any middle portion must necessarily have been divided. The instrument being removed, the animal continued breathing as readily, apparently, as if unhurt.

Experiment 2nd.—By the same operation the spinal marrow was exposed at the upper dorsal vertebra. The same instrument was in like manner introduced between the columns here and allowed to remain some minutes, but without producing any change in the action of the muscles. The animal becoming faint from loss of blood, the instrument was removed, respiration continuing easy. Death was now instantly caused by the insertion of the knife between the occiput and atlas.

Experiment 3d.—The spinal marrow of another kitten was exposed between the last cervical and first dorsal vertebræ, and immediately divided with the scissors in a transverse direction. This paralysed the lower extremities, but produced no material change in the action of the abdominal muscles, except that their expansion and contraction was not quite so full as before. The change was, however, very slight, but it was very evident here that the abdominal muscles did not act by themselves, but that they were materially influenced by the diaphragm, as they expanded and contracted at the same instant that it ascended and descended. The cord was afterwards divided at the fifth cervical vertebræ, but without any very material change, except that it rendered the action of the diaphragm more plain and completely paralysed the intercostal muscles.

Experiment 4th.—The cord was exposed in the spinal canal of another kitten, and divided at the middle dorsal vertebra. In this instance the abdominal muscles were affected in the same manner as in a former experiment, although the effect upon respiration was rather more marked in this instance, as the operation was performed more easily and the animal was allowed to live for a longer time. At the close of some minutes, respiration still continuing nearly natural, life was destroyed by the division of the cord at the first cervical vertebræ.

These experiments were repeated twice on other kittens, and with the same results.

Experiment 5th.—By a transverse incision on the occiput, the skin of a kitten two months old was divided, and then dissected forward to the crown of the head, and backwards to the sixth cervical vertebra. The spinous processes of the three last cervical vertebræ were now very carefully removed with the scissors, and the cord exposed. The roots of the seventh, sixth, and fifth nerves were next cut, when respiration, which before went on naturally, became slightly laboured.

The roots of the three next nerves were then also divided, when the action of the diaphragm ceased entirely, and likewise that of the abdominal and intercostal muscles. The animal, however, did not die instantaneously, but continued gasping for near a minute, when death took place; but previous to this event motion was observed in the extremities and tail, which was increased on touching the cord. Sensation was not tried, as the time was too short between the division of the roots and the death of the animal, but it no doubt remained as well as motion.

Had there been in the spinal cord any middle portion especially devoted to respiration, as Sir Charles supposed, the division of it would have been caused by experiment 1st, as owing to the manner of operating, its division was ensured, while at the same time the other columns would remain uninjured; thus preventing the action of the muscles supplied by them from being interrupted. According, however, to his theory, this division ought to have arrested the action of the respiratory muscles, whilst on the contrary they were not all affected by it!

If, again, we admit that an injury to the upper part of the spine does affect respiration, then we must acknowledge that it does so through the medium of the anterior cord and roots; for experiments third and fourth show that the division of these portions rendered respiration laborious to a slight degree, though it did not stop it entirely.

We are, therefore, I think, justified in believing that there is no distinct middle column devoted to respiration; but that so far as the muscles *are* influenced by nerves below the fifth cervical vertebra, they receive that influence through the anterior roots.

Did not these experiments induce us to believe this, the fourth alone would almost do so, as we there see that the division of the upper cervical nerves not only stopped the action of the diaphragm, but also that of the abdominal and intercostal muscles. That the cessation of motion in these muscles was not caused by injury to the anterior column, is apparent from the motion observed in the hind legs after the operation, as well as from the impossibility of such a mishap occurring from the way in which the operation was performed. From these results I think we must conclude that the diaphragm is the only proper respiratory muscle, and that the abdominal and intercostal ones are only secondary and mechanical in their action. For, as the intestines are placed within a circumscribed cavity, where they could not suffer compression without injury, it follows that if they are pushed down by the diaphragm there must of course be a corresponding expansion of the parietes of the cavity which contains them.

This cavity, however, is formed of inexpansible materials, except in front and at the sides. When, therefore, the diaphragm contracts, the abdominal muscles being the only expansible part of the abdominal cavity, must be forced out, for the reasons before stated; and so also when, owing to the oxygenation of the blood it becomes necessary to contract the chest, the brain perceiving the sensation through the par vagum, &c., must transmit the necessary impression to these muscles by the anterior column and roots of the spinal nerves. The muscles being now stimulated both by the nerves and also by the tendency of all expansible bodies to return to their original condition, contract again, and by forcing up the intestines and bringing together the ribs, aid the diaphragm in its ascent.

A similar action, and one which is also somewhat connected with the process of respiration, is observed every day in labour. In this act it is well known that when delivery is about to take place, the patient first taking a full inspiration, expands the chest, and thus compresses the contents of the abdomen, the abdominal muscles having been previously distended as much as they would admit of by the growth of the fœtus. The uterus and intestines now feel the compression, and the former being also stimulated by the stretching of its own fibres by the developement of the child, contracts upon itself, and prevents the fœtus from being pressed into a shapeless mass by the diaphragm, and also forces it to present one of its extremities to the superior strait of the pelvis. The uterus being thus fixed by the abdominal muscles in front, is prevented from deviating from the axis of the pelvis, and the descent of the diaphragm is therefore made to bear wholly on the fundus of it; the cervix being unsupported, yields; the contraction of the uterine fibres stretches the orifice, the mouth becomes thin, and the child is forced from above downwards, as from a canal with unyielding parietes, and labour is terminated. That this expulsion is not caused by the contraction of the abdominal muscles, as some have supposed, must, I think, be evident, when the tendency of their contraction is observed.

If, as is said by some, the diaphragm only serves as a *point d'appui* for the contraction of the abdominal muscles, the fœtus could not be expelled as it is constantly seen to be; for the contraction of these muscles alone would only compress the uterus in an antero-posterior direction, and of course prevent the expulsion of the child, by forcing it in the wrong direction; while on the contrary the action first spoken of is natural and agreeable to true mechanical principles.

Besides, the terms in daily use in the lying-in room, as well as the

efforts of the patient herself, show the action which really takes place, and which we endeavour to promote by directing the voluntary motions of the woman. We do not, when called to a person in labour, merely tell her when a pain comes on to take a long breath, for that alone would only fix the diaphragm and expand the chest; but we also tell her at the time she does this to *bear down*, in order that the uterus may be compressed in the manner before mentioned. Was the patient only to take a long breath, she might do so without compressing the uterus in the least, simply by breathing so as to elevate the shoulders, in the same way that a person who is injured in the abdomen would naturally do to prevent motion in that part; she therefore both inspires and also bears down.

But this mode of action of the abdominal muscles is denied by some, who believe that they alone compress the uterus. For, say they, if we admit this action in labour, how can we account for the action of the same muscles in defecation; since no one can deny that they contract powerfully in that process. They certainly do so; but the reason of their contraction in that case, and not also in labour, will, I think, be obvious, when we refer to the difference in the shape and contents of the uterus and intestines. In the one case, the uterus is a pyriform body, whose mouth is directly opposite to the fundus, which is again in a direct line with the descent of the diaphragm, and its contents are to be expelled in the same line, or by the fundus advancing to the neck, as seen in cases of inversion.

But the case is entirely different with the intestines. We there have a long narrow tube, doubled many times upon itself, and with a portion suspended, as it were, transversely in the abdomen, immediately under the diaphragm, with the opening depending from the arch thus formed.

Was the diaphragm, then, to perform the same action here that it does in labour, the consequences would be very different from that which is required. For, instead of the contents of the colon being forced out by the descent of the diaphragm, as is the case in labour, the arch of it would be driven down and a curve formed downwards, which would necessarily prevent the passage of fœcal matter along it; but by the diaphragm remaining fixed and the abdominal muscles alone contracting, this arch is forced up against the diaphragm, and thereby rendered nearly straight; while at the same time it is compressed from before backwards, so as to force its contents onwards in a manner similar (to use a homely figure, but one which represents the action exactly) to that which is caused by the pressure of the foot on a common garden hose distended with water.

These circumstances, therefore, point out to us clearly the action of these muscles in so many other processes than respiration, but which are yet more or less connected with it, that their action in it alone may be easily seen. And since, to perform these other actions, they must be influenced by muscular nerves, we are, I think, justified in believing that as the actions correspond, so do the causes exciting them, and that therefore the abdominal muscles are influenced in respiration (as far as they are by nerves) by the *anterior* portion of the spinal cord, and that no particular part of the cord is devoted to this action alone.

By this explanation all ideas of there being a respiratory column are considered as erroneous. All the spinal nerves, therefore, below the first, must, I think, be considered as being entirely for sensation and motion, while the only proper respiratory ones must be granted to be those connected with the medulla oblongata, whose destruction puts an end to respiration.

Though thus differing in many parts from the opinions of Sir Charles Bell, yet I must say that I have not done so from any vain wish to obtain eclat for pretended discoveries which future observations may contradict. But there is here nothing but a plain statement of the results of my own observations; and as all of them have been witnessed by others, no hesitation is felt in maintaining their correctness.

Having also mentioned particularly the manner in which the operations were performed, it is now in the power of any who may doubt their results to prove their correctness. Knowing the liability of any one to mistake the effect of certain causes, my object will have been fully attained if, finding myself proved to have been mistaken, attention shall have been called to a subject which is worthy of the consideration of the most skilful experimenter.

ART. III. *Diseased Kidney, with Albuminous Urine.* By T. C. ADAM, of Lenawee County, Michigan.

The attention of the profession was first called to the connexion between a peculiar organic disease of the kidney and a coagulable or albuminous state of the urine, by Dr. Bright, in the first volume of his "Reports of Medical Cases," published in 1827. The result of his experience, as contained in that volume, may be thus stated: When the urine in dropsy is albuminous, and more or less coagula-

ble by heat, the kidneys have been found diseased in structure, the liver being generally but slightly affected. On the other hand, when dropsy has been dependent on disease of the liver, and the kidneys have not been diseased, the urine has not been coagulable. When both liver and kidneys have been structurally diseased, the urine has also coagulated. "I have never yet," says Dr. Bright, "examined the body of a patient dying with dropsy, attended with coagulable urine, in whom some obvious derangement was not discovered in the kidneys." We do not claim for Dr. Bright the merit of having first pointed out the connexion between dropsy and disease of the kidney, although he first indicated the frequency of this connexion; but, we are well assured, that to him is incontestably due the honour of having first established the important fact, that organic disease of the kidney can be detected during life by its connexion with coagulability and low specific gravity of the urine.

Ever since 1828, when we first became acquainted with these results of this very eminent physician's researches, we have been attentive in procuring evidence which might establish or overthrow the stability of this index to a desirable diagnosis. Judging by the infrequency of publication upon this subject, we should be induced to conclude that neither in this country nor in Europe has this valuable discovery in diagnosis secured, among the generality of practitioners, that degree of attention which its importance and frequent applicability would seem to demand. That renal diseases with an albuminous state of the urine are not of uncommon occurrence I am inclined to believe from the fact that Dr. Bright, whose attention has been directed to these complaints for upwards of ten years past, has recently given it as his opinion that not less than 500 persons fall victims to them, in London, during the course of a single year. Moreover, in conversation with medical men upon this subject, I have been told, that they could recollect several cases whose course and history corresponded very closely to the symptoms and progress of these renal diseases, and concerning the seat and nature of which they were, at the time, in no small degree perplexed. From their recollections they have little doubt of these anomalous and puzzling cases having been identical with those now under consideration.

Moved by these considerations, it occurred to us while lately drawing up a report of a case of this kind for the information and satisfaction of the family physician and friends, at a distance from whom the patient died, that the substance of that report might be no unacceptable offering to my brethren; especially, as on searching the annals of medicine, it appeared that so few had claimed their atten-

tion on the subject. We proceed, then, to submit to the profession the principal part of the report alluded to, and of the reflections with which it was accompanied.

When your former patient, D. L. S., first applied to me about the middle of February last, he complained of an occasional inability to speak plainly, arising from a sensation like globus in the throat, and of a feeling of numbness in the left side of the face, which was observed slightly to drag, about the corner of the mouth. This partial paralysis of the face, which depends, in all cases, upon a disordered, debilitated, or morbid condition of the portio dura of the seventh pair of nerves, could not, after strict inquiry, be traced to any of those local causes in which it *generally* originates. No blow or external injury had been received; no gland in the course of the nerve could be discovered to be swelled; there was no suppuration in the ear; and finally, there was no reason to suspect any suppuration or effusion at the basis of the brain from any previous inflammatory condition. Nor had that side of the face been exposed to any current of cold air. In the absence of these—the usual causes of this curious affection—I was left to conjecture upon the agent which was producing the paralytic condition of this nerve. Of all my conjectures, that seemed the most probable which referred the disease of the nerve to some congestive state of the brain in the vicinity of the origin of the nerve, or to some effusion or pressure there. Headache, slight wandering of the mind, sleeplessness, and other minor cerebral affections were the data which determined me to adopt this conjecture. The tendency to low forms of arachnitis in those whose urine contained albumen, as did that of D. L. S., assisted in determining me to this *theory* as to the nature and cause of the facial paralysis. I am no urine-doctor; but a history of his previous complaints, and a sense of the importance of ascertaining the state of this secretion, determined me at this early period of the disease to inquire into the condition of the function of the kidneys. Perhaps it would be better that the majority of practitioners should feel as did Hippocrates. Per vesicam prodeuntia inspicere *oportet*, an sint qualia sanis prodeunt. That a certain set of physicians carried this investigation to a ridiculous extreme, is no good reason why others should run into the opposite extreme, and neglect this method of investigating disease altogether. That the brain was in a state quite liable to take on, or become the subject of, either congestion or effusion, I farther thought probable from the fact, that his constitution, compared with what it had been previous to the attack of hæmaturia and inflammation of the kidneys seven months

previously, was what might be very appropriately called very much 'broken down.' That the brain in such a state should be very nearly in the condition in which it is found in those who die of phthisis, dropsy, and other exhausting diseases, seemed quite probable. In such there is generally effusion and softening. That some morbid condition of the base of the brain, which affected the facial nerve with paralysis, should likewise be the occasion of the peculiar feeling in the throat, by affecting the glosso-pharyngeal and ninth pair at their origin, was the opinion which I adopted, or felt inclined to prefer in explanation of this other symptom. Such was the manner in which I interpreted the symptoms and history of this case—such the views which I adopted concerning the real, intimate or proximate pathological condition, which had come under my care.

You are well aware that we are called upon, in a majority of cases, with inconsiderate and incommoding haste, to give an opinion to the patient and his friends as to the nature of the disease under which he labours, and its probable termination. This part of our duties requires no inconsiderable exercise of judgment and consideration. Before giving any decided opinion, I thought it necessary to subject specimens of the urine to some of the usual tests of the presence of albumen. The unfavourableness of my prognosis was to be regulated, in a great degree, by the quantity of albumen found in the urine. We all know that even healthy urine contains a small proportion of this principle. Cruickshanks found that the precipitate which he procured by adding an infusion of tannin to healthy urine, amounted to $\frac{1}{240}$th part of the weight of the urine. This will not cause coagulation by heat, which requires a notable impregnation; but it is generally found (though not universally) that a precipitate can be procured from healthy urine by means of a saturated solution of corrosive sublimate. Perhaps it might be found universally in this condition, if the urine were taken about two or three hours after eating. But this by the way. Some, with Dr. Mackintosh, were inclined to smile at Dr. Bright's supposed discovery of the connexion between diseased kidney and coagulable urine, because they found, or *were told*, that they could produce at pleasure this state of the urine by some slight derangement of the digestion—almost certainly by heavy, unfermented bread, dumplings, pastry, and other preparations of flour containing 'shortening,' lard, suet or butter. But in two important points it has been ascertained that this occasional impregnation of the urine with albumen can be distinguished from that arising from diseased kidney. In the first place it is transient, not continuous, and generally disappearing after a few hours, as ascertained by Gregory and

Christison. In the second place, coagulable urine continuously secreted and connected with disease of kidney, has been uniformly found of a very low specific gravity; (1013.18 being the average of Gregory's fifty cases, and 1014 and a fraction being the average of nineteen cases published by Dr. Bright, and determined by Dr. Bostock;) while albuminous urine caused by temporary derangements of the digestion is not attended by any reduction of its usual density. I mention these circumstances chiefly to show you that I was on my guard against any deception in the *data* for the attainment of which I made my examinations of the urine, and which were to serve as the basis of my wished for prognosis. In all my trials I could obtain precipitates (of albumen) by means of muriate of mercury, acetate of lead, nitrate of silver, and other metallic salts. In some of my trials, I could obtain coagulation by heat, (in a spoon over a lamp,) though generally in all trials by heat there was a cloudiness and frothiness. From concentrated urine I could obtain solid albumen by agitation with alcohol. Nitric and muriatic acids were also employed, as Dr. Gregory recommends as a point of some importance, that when it is wished to ascertain the presence of albumen in suspected urine, "one or more other tests should be added to that of heat, in order to guard against a possible source of error." Corrosive sublimate, though the most delicate test of the presence of albumen, is not to be depended on, as it causes in healthy urine a precipitate, exactly similar to that which it causes in the urine of kidney disease. Alcohol, and the above named acids, are not liable to any such objection.

Having thus ascertained that the urine, not only after meals, but continuously, was impregnated with albumen, and having been told that the *appearance* of the urine after cooling had been for months, and ever since our patient had left home, exactly the same as at present, I was furnished with data from which I might, with a high degree of probability, satisfy myself as to the morbid condition of the kidney, and venture upon a pretty decided prognosis, taking into consideration also the tendency to cerebral disease and other symptoms. Accordingly, about the fourth day of my attendance, I gave a very unfavourable prognosis to his friends here, of which Mr. S. advised you in one of his earliest communications to the parents of the patient. For the qualified phrase, 'high degree of probability,' which I have just made use of, I might have substituted the unqualified term, certainty, had I known I could depend on the recent observations of Dr. Osborne of Dublin. According to his investigations in Sir Patrick Dun's Hospital, he has not met with a single instance of urine coagulating in a constant manner, in which post-mortem ex-

amination did not afford proofs of disease of the kidney; "nor on the other hand, an instance of disease being found in the kidney after death, in which, on taking a specimen of the urine in the bladder, it did not coagulate." But this, though the result of a good many observations, may not turn out to be a general law, and I therefore preferred the more moderate assumption. I had no instrument to determine the specific gravity, else I should have made observations as to the characteristic lowness of the gravity of the urine of kidney disease.

The following circumstances were taken into consideration while endeavouring to determine the intimate pathological condition of my patient, and the probable termination of the case. About eighteen months previously to his present illness he had an attack of scarlatina; and seven months before he had an acute attack, with hæmaturia. For several months subsequent to this latter attack he had inclination to pass urine frequently; and during all these seven months he could not recollect that he had perspired. He has had a constant pain in the lumbar region, and has felt so much enfeebled that he could not bear any active exertion. His sleep has been disturbed and unrefreshing; his digestion languid, sometimes uneasy, and latterly there has been occasional vomiting. My early attempts to restore perspiration and to improve the function of digestion were unavailing. I subjoin a few remarks by Dr. Bright, relative to the symptoms and progress of those cases of renal disease which have been the subjects of his observations. When you shall have read them, you may easily imagine the thoughts which must have passed through my mind when bringing them to bear on my case. "A child, or an adult," says Dr. Bright, "is affected with scarlatina, or some other acute disease, or has indulged in the intemperate use of ardent spirits for a series of months or years; he is exposed to some casual cause or habitual source of suppressed perspiration; he finds the secretion of his urine greatly increased, or he discovers that it is tinged with blood; or without having made any such observation, he awakes in the morning with his face swollen, or his ankles puffy, or his hands œdematous; if he happen, in this condition, to fall under the care of a practitioner who suspects the nature of his disease, it is found that already his urine contains a notable quantity of albumen; his pulse is full and hard; his skin dry; he has often headache, and sometimes a sense of weight or pain across the loins. Under treatment more or less active, or sometimes without any treatment, the more obvious and distressing of these symptoms disappear; the swelling, whether casual or constant, is no longer observed, and the urine ceases to evince any admixture of red particles; and according to the degree of importance

which has been attached to these symptoms, they are gradually lost sight of, or are absolutely forgotten. Nevertheless, from time to time, the countenance becomes bloated; the skin is dry; headaches occur with unusual frequency; or the calls to micturition disturb the night's repose. After a time, the healthy colour of the countenance fades; a sense of weakness or pain in the loins increases; headaches, often accompanied by vomiting, add greatly to the general want of comfort; and a sense of lassitude, of weariness, and of depression, gradually steal over the bodily and mental frame. Again the assistance of medicine is sought. If the nature of the disease is suspected, the urine is carefully tested, and found, in almost every trial, to contain albumen, while the quantity of urea is gradually diminishing. If, in the attempt to give relief to the oppression of the system, blood is drawn, it is often buffed, or the serum is milky and opaque, and nice analysis will frequently detect a great deficiency of albumen, and sometimes manifest indications of the presence of urea. If the disease is not suspected, the liver, the stomach, or the brain divide the care of the practitioner, sometimes drawing him away entirely from the more important seat of disease." Had I been unacquainted with the researches of Dr. Bright and his successors upon this subject, I should, most probably, have considered this case as obscure and anomalous; but, like the practitioners last referred to, should have allowed none other than the more important seat of disease to have absorbed my attention.

I inquired very accurately to ascertain the former or the present existence of any dropsical effusion, but could not detect that there existed, or ever had, even puffiness under the eyes, or œdema of the ankles. My impression *then*, was, that some form of dropsical effusion generally coexisted with disease of the kidney. On farther inquiry, I find that this is not a necessary or even a prevailing accompaniment. The following passage, bearing on this point, I found in Dr. Gregory's report.

"The proportion of cases in which dropsical effusion was a prominent symptom is large; but it would be incorrect to draw any conclusion on this point from these cases alone, as in almost the whole of them it was the presence of dropsy which led to the examination of the urine. Out of the whole number, however, that is to say, out of the eighty cases, more or less of dropsical effusion existed in fifty-eight, which is sufficient to prove that although not an essential symptom, dropsy is a very frequent concomitant of this alteration of structure in the kidney."

The pain in the loins of which D. L. S. had made complaint from the time of the acute attack accompanied with hæmaturia, which oc-

curred seven months previously to his last illness, I did not consider as of much value in diagnosis, except so far as it went to confirm more unequivocal marks of disease. Without the other diagnostic symptoms, I should have paid but little attention to this lumbar uneasiness; for in almost all the complaints of women, and in many of those of the other sex, a feeling of weakness, uneasiness, or pain in this region is quite a common occurrence. But, in the language of Dr. Gregory,

"I have now seen so many cases in men as well as in women, in which pain of the loins had formed a very prominent symptom during life, and in which this disease of the kidneys was found after death, that I am inclined to consider it an important diagnostic symptom when taken along with other and more unequivocal signs."

I have detailed, I hope, with sufficient minuteness, the symptoms which attracted my attention while investigating the nature of the disease and establishing a diagnosis; and I have endeavoured to show that my interpretation of these signs was in accordance with the doctrines of the most competent authorities upon the subject. There can scarcely exist a doubt that the views which I adopted were the true ones. Dr. Bright says that he is "not aware of any disease in which the character is more completely preserved, or in which the symptoms more clearly mark a specific form of malady."

I shall now sketch an outline of my remedial treatment, and of the course of the disease. The means which I employed were directed to one or more of the following indications. Firstly, to palliate or remove the radical disease in the renal organs; secondly, to obviate the agency of the renal disorder upon the brain and nervous system, and to remove the existing effects of that agency; thirdly, to improve the state of the digestive and nutritive functions generally, and enable the constitution to bear up against the destructive operation of the primitive disease and its consequences. In accordance with these I first of all applied blisters to the nucha and back of the ear on the paralysed side, and subsequently dressed the blisters with an ointment containing a small portion of emetic tartar. This preserved the blistered surface from healing, and kept up a continuous irritation. I next employed mild alterative and laxative medicines to remove sordes and improve the state of the digestive apparatus, of which the chief ingredients were rhubarb, ipecacuanha and aloes. I avoided every form of mercury, because it has been thought by the most competent authorities to accelerate kidney disease, and to be more prejudicial than otherwise. Dr. Bright, upon this subject, says, "In general, it has appeared to me, that those who, in the con-

firmed forms of this renal affection, have abstained from mercury, have broken down more slowly under the disease than those who had taken it to any extent, more particularly if they persisted till its constitutional effects have completely manifested themselves." In the experience of Drs. Gregory and Osborne, mercury has not been found beneficial. For these reasons I abstained from the administration of mercury in any form. Flannel was worn next the skin, a diaphoretic regimen adopted, and as there was great depression of the nervous energy, ammonia was preferred to any other diaphoretic from the materia medica. Under the treatment of which the above formed the principal part, the facial paralysis and difficulty in speaking gradually disappeared, and the headache moderated a little, and was complained of more towards the vertex than in the temporal and frontal regions as formerly. But there could not be said to be any improvement in the state of the stomach and bowels: there was languid action, dark coloured secretions, and the tongue remained very heavily coated. No sensible perspiration could be obtained with all 'appliances' and domestic 'means to boot.' The skin remained dry and unperspirable. Although the paralysis of portio dura was disappearing, yet I could not allow myself to suppose that the brain was undergoing any process of amendment; for the headache was not removed, the nights were becoming more restless, the days spent in a state of torpor and somnolency, and there was deep sighing and many other marks of a typhoid state or of deficiency of nervous energy. The spine was examined, and one spot about the second dorsal vertebra found to be tender on pressure. A few days previously it was observed that the left arm and leg dragged a little, or were lacking in muscular power. The diaphoretics had made no observable change upon the urinary secretion. What was now to be done? The mode in which a fatal result was threatened—"the tendency to death"—seemed to consist chiefly of a low form of cerebral congestion, meningitis, or other morbid process in the encephalon, which might terminate by coma, convulsions or epilepsy. On reference to Dr. Bright's latest observations, we were strengthened in our conviction that it was in this way that the disease was likely to prove fatal. He says, "I have been able to trace the circumstances connected with the conclusion of life in seventy cases, and find that no less than thirty out of these seventy have died of well-marked symptoms of cerebral derangements, noted under the titles of 'apoplexy,' 'coma,' and 'epilepsy.' Eight others have died suddenly." A perusal of cases related by others, as well as those by Dr. Bright, had impressed me, previously to reading this numerical estimate, with the persuasion that a

termination by some head affection was the most common of all the consummations of this disease.

As derivatives from the head, and generally to alleviate any head affection, I kept up irritation by antimonial ointment on the back of the neck, applied a blister farther down the neck, evaporating lotions to the head, and ordered any kind of applications which would keep up the heat of the feet, which were becoming daily more affected with cold. Finding that too much company was allowed to see him, and that it increased his delirium and vigilance during the night, I interdicted it firmly—firmness is not unfrequently necessary. Venesection was suggested; but after consideration of all the pros and cons, my best judgment decided against it. Drs. Bright and Gregory are of opinion that it is chiefly in the commencement of the disease, if ever, that the abstraction of blood is beneficial. In later stages of the disease the countenance is usually pallid, as in this case particularly, from seven months bad health; and the system is daily undergoing the loss of albuminous matter by the kidneys, and on these and other accounts it seemed wise and proper to me to hesitate before venturing "to afford a temporary alleviation, at a still farther expense of the more nutritious and stimulating properties of the blood." It might have been said with some plausibility, that as the head was painful, delirium was occasionally present, and the senses were becoming less acute, and that a slow inflammatory process was going on. But this might have been answered by stating the deficiency of other marks of an inflammatory condition, particularly of any excitement of the circulation, (the pulse being throughout slow, though full and firm,) or in the words of Dr. Bright, who says that this inflammatory process is greatly to be doubted, "as the symptoms, and many of the appearances after death, admit of a ready solution from the state of debility and anæmia to which the patient is reduced." Nevertheless I abstracted a few ounces of blood by cupping from the region of the kidneys, and after one or two poultices, applied blisters. The best authorities prefer blisters, setons, or issues, to the abstraction of blood. Camphor and opium, four parts of the former to one of the latter, with a minute portion of ant. tart., seemed to soothe a little and reduce the delirium and sleeplessness of the nights.

The skin, which had been unperspirable for seven months, remained so, notwithstanding a flannel inner dress, blisters, and diaphoretics, internal and external. Unable in this way to relieve the kidneys, the quantity of albumen passing through was on the increase and the urine generally more scanty, my attention was directed to the means of obtaining from diuretics some alteration in their function; avoiding,

if possible, any detrimental excitement. I knew that the majority of the patients of Drs. Bright and Gregory who had recovered from attacks of this disease in some of its various forms, had used diuretics; chiefly supertartrate of potass, squills and digitalis. *A priori*, they appear of doubtful efficacy for good, and latterly Dr. Bright seems to employ them with more hesitation than at first, while Dr. Osborne condemns them. I ventured upon the administration of those above named in small doses, which increased the quantity of the secretion, with some relief to the increasing delirium, stupor and coma. But these latter symptoms made head notwithstanding, and he had almost entirely the appearance of one labouring under typhoid fever. The chances of recovery, small as they were deemed at first, were daily diminishing. For several days before his death he had about every day an attack of a convulsive nature, seemingly from obstruction to inspiration. For the last five or six days of his life there was little to be observed; low muttering delirium or coma filled up the whole history. For two days I had observed the pomum adami, or larynx, and upper part of the trachea very prominent, protruding nearly as far as the chin. The evening before he died I could see no observable change; the pulse was full and strong, and in this consisted the principal difference between my patient's symptoms and those of typhoid fever. In the latter part of the evening his breathing became more laborious, and shortly after midnight the painful history of his disease was closed.

Circumstances prevented my intended post-mortem examination, so that, to my regret, I am unable to subjoin a description of those morbid changes in the kidneys, and perhaps brain, of the existence of which there can be little doubt.

From the first complaint of difficulty of speaking and numbness of the cheek till the day of his death, there intervened about thirty days.

Clinton, Michigan, March 16, 1837.

Art. IV. *Case of Deformity of the Mouth, from a Burn, successfully treated by Dieffenbach's method.* By T. D. Mutter, M. D., Lecturer on Surgery. [With a Plate.]

The following interesting case came under my charge the latter part of November, 1836. The individual affected was the daughter of a highly respectable practitioner of medicine residing in South

Carolina, and at the time the accident productive of the deformity occurred, about 11 years of age. Her general health has always been perfect, though her temperament is a strongly marked lymphatic.

In the commencement of the winter of 1835, while at play with her companions, she was by some means or other thrust against a heated stove, by which her hands, arms, neck, and the lower part of her face, were severely burned.

Her wounds were treated in a most judicious manner by her father; but, in spite of all his efforts, those about the mouth cicatrized with so much contraction, that the entrance into this cavity was almost obliterated. As soon as the tenderness of the part was somewhat diminished, he commenced a treatment calculated to restore this orifice to its natural size. He first began by introducing sponge tents, which were allowed fully to distend themselves; but, after repeated attempts with them, by which he caused the child much suffering, without materially benefitting her, they were abandoned.

He then attempted to dilate it, by first making an incision of about six lines in length, extending from each angle of the mouth, in an outward and nearly horizontal direction, and afterwards introducing the tents to prevent the lips of the wounds from uniting. This appeared at first to be productive of some good, but in a short time they cicatrized and contracted, and the patient remained in as uncomfortable a condition as before.

Finding himself foiled in both attempts, he determined to visit Philadelphia for the purpose of consultation. She was accordingly brought on, and became a patient of mine. When I first saw her nearly a year had elapsed since the occurrence of the accident. Her appearance at this time was very singular. Firm and dense cicatrices nearly surrounded the mouth, but were most marked on the lower lip, and about the angles; while the orifice of this cavity was barely large enough to admit the point of the finger, and presented an oval form. The cicatrices of the incisions made by her father, were also very apparent at each angle. (See *fig.* 1.) Her general health was perfect, and it was only on account of the deformity and difficulty of taking food that the operation was requested. Her speech was not much affected, although some of the labial sounds were imperfectly pronounced. The lining membrane of the mouth was perfectly normal.

From the history of the case I concluded at once that it would be utterly useless to attempt a cure by the repetition of the measures already employed, and which are the ones usually had recourse to. I therefore proposed the operation recently devised for such cases by

Fig. 1.

Fig. 2.

Fig. 1.

Amer. Jour. Med. Sci.

Engraved by J. Yeager.

the celebrated Dieffenbach, and her father consenting it was accordingly performed on the 28th of November, 1836.

The patient was seated in a low chair, with her head supported by her father, and exposed to a good light. Following the directions of Dieffenbach, I then introduced the extremity of the fore finger of my left hand into the mouth, and placed it under the left labial angle, which, by this means, was rendered prominent and sufficiently firm to permit the second step of the operation to be readily executed.

This is accomplished by the introduction of one blade of a pair of narrow, straight scissors into the substance of the cheek, between the mucous membrane and the other tissues, and a little above the commissure. The blade is then slowly pushed from before backwards, separating as it passes along the mucous membrane from the muscles and integuments until its point reaches the spot at which we wish to locate the new angle of the lips; the blades are then closed, and the parts included between them cut squarely and smoothly at a single stroke. The first incision being completed, the scissors were withdrawn, and a second one, parallel and similar to the first, made in the lower lip; the distance between the two being about three lines. These incisions were then united at their posterior termination by a small crescentic section.

By these cuts it is evident that a small strip of muscle and integument was insulated from the surrounding parts, and it only remained to separate it from the buceal mucous membrane, which was easily done by a single stroke of the scissors.

The second step of the operation being thus finished on the left side, similar incisions were performed on the right.

Looking at the lines traced out in *fig.* 1, which shew the course of the incisions on each side, it will be seen that two wounds, each about three lines wide and six long, the floors of which were formed by the mucous membrane of the mouth, had been made. The next steps of the operation, and by far the most difficult of the whole, were the division into equal portions of the mucous membranes, the eversion of the flaps, and their attachment to the edges of the incisions just made, as well as to the red pellicle of each margin of the lips.

To divide the membrane equally I separated the jaws of the child as much as possible, by which measure the former was put upon the stretch, and kept sufficiently firm to bear the operation of the scissors. The incisions in the membrane did not extend so far as those made in the muscles and skin, but stopped about three lines from the union of the latter. This was done in order to make the outer portion of this tissue adapt itself accurately to the new commissure. The

flaps were then brought out, reflected over the margins of the wounds and firmly attached to them by means of the twisted suture, the needles used being very short and fine. (It should be recollected that the membrane must be first attached to the commissure, by which measure we secure the proper adaptation of the flaps to the other parts.)

Every thing having been properly adjusted, a common roller bandage was applied, as in cases of fracture of the lower jaw, in order to prevent any derangement of the wounds. The patient was then placed in bed with her head elevated, and as she had just before the operation eaten freely of some light food, ordered to take no nourishment of any kind until the next visit, and to be perfectly silent.

Nov. 29*th.* Passed a good night; slept well; no fever; and complains of no pain; parts merely a little sore; needles all in place; writes that she is hungry. Ordered thin oat meal gruel as diet, which, as well as her drink, is to be given with a small teaspoon.

30*th.* Quite as well as yesterday; every thing in place; bowels costive. Ordered an injection of white soap and water; diet as before.

31*st.* Complains of stiffness in the wounds, but no pain; dressings all secure; injection had operated well; pulse natural. Ordered chicken soup for diet.

Dec. 1*st.* The bandage was removed and the first dressing commenced. The sutures which had been closely bound down to the parts by blood, were carefully softened with warm water and cut away. As soon as they were removed, and the parts properly dried, the most gratifying exhibition of the success of the operation was afforded. On both sides union between the reverted mucous membrane and the margins of the wounds had taken place nearly throughout, and the *new lips* presented an appearance almost natural. Some of the needles were then removed, but as there appeared to be a feebleness in the adhesion at some points, the needles passing through them were allowed to remain, and a thread cast loosely around them. The bandage around the head was also reapplied.

2*nd.* Second dressing, parts all firm and healthy; the remaining needles were now removed, and the bandage only reapplied, which was done to prevent talking; no pain in the part, and the patient in fine spirits. Ordered bowels to be opened with an injection, and the diet to be more nutritious, but still liquid.

Nothing remarkable occurred in the subsequent treatment. All dressings were taken off on the 15th inst., and the child allowed to pursue her ordinary course of life. The mouth presented a very good appearance, though the lips were somewhat thinner than natural,

and there was some difficulty in bringing them into close contact, especially at the central portions. I have no doubt, however, but that this defect will soon disappear. (*Fig.* 2, represents her eight weeks after the operation.)

Remarks. The annals of modern surgery hardly afford an example of more ingenuity than is exhibited in the design of the operation just detailed. Dieffenbach, whose fame as a rhinoplastic surgeon is just beginning to be appreciated in this country, and whose skill and success fully justify the eulogiums which are now bestowed upon him, having been foiled in several attempts made to relieve cases similar to the above, at last hit upon the beautiful expedient illustrated by the operation. The great difficulty in all such cases arises from the constant tendency to contraction manifested by the cicatrice, which occasionally goes on to such an extent that the orifice of the mouth is almost closed. At the first examination of such a deformity, the remedy which seems to promise most success, is mechanical dilatation. Unfortunately this is productive of but temporary relief, and has never, I believe, effected a permanent cure. Next to this method comes incision of the commissures. We might naturally expect such a course to be sufficient to effect the end desired, and in all probability this would be the case could we by any means prevent reunion of the edges of our incisions. But this, it would appear from the statements of the best authorities, has hitherto been impossible; for, notwithstanding the introduction of tents, leaves of sheet lead, cerate cloths, &c. between the lips of the wounds, their adhesion, more or less complete, is sure to take place.

The primary indications in the treatment of such cases then are, 1st. the division of the commissures; and 2nd, the application of some measure by which the margins of the incisions may be made to cicatrize separately. Aware of the difficulties attendant upon the fulfilment of these indications, it occurred to Dieffenbach that if we could cover these margins with a tissue which would not readily unite with itself, that a cure would be accomplished. He accordingly performed the operation which I have just described, and his success was such as to lead to his repetition of it in several cases, in all of which the most happy results were obtained. There can be no doubt relative to the value of this new process, as it is applicable to almost every case of contraction of the natural openings, either congenital or acquired. It is moreover safe, and but slightly painful. The whole operation when performed on the mouth may be accomplished in ten or fifteen minutes, and there is little or no hæmorrhage to be apprehended, for the branches of the coronary arteries which are divided

are so small that they contract of their own accord, and do not require the ligature.

There is one case, however, in which it would not in all probability succeed, viz. when the buccal mucous membrane itself participates in the lesion. But this complication must be of very rare occurrence, as the injury in almost every instance is confined to the outer surface of the surrounding parts. In conclusion, I may remark, that although this is the only case that has come under my immediate observation, the success attending the operation has been such as to lead me to recommend its performance in every instance in which the mucous membrane surrounding the orifice is in a sound condition.

Philadelphia, May, 1837.

ART. V. *Glanders in a Youth.* By J. WIGGINS HEUSTIS, M. D., of Alabama.

Mr. Y———, a butcher, of Mobile, requested me to visit his son, a youth about twelve years of age, who had been sick for ten months, and had been under the care of different physicians at sundry times, but without receiving any benefit. The prevailing belief appeared to be that the disease was mercurial, as at the commencement of his illness he had taken a large dose of calomel, which, although it had operated freely, was supposed to have left its effects upon the system, in the form of ulcerations and rheumatic affections. In fact, the disease appeared to be anomalous and unique. The complaint, for the most part, had been confined to the limbs, but within a few days of the time I saw him it had attacked one side of the face, involving the cheek, eye, and upper lip, which were much tumefied, smooth and shining; the swelling closing the eye of the affected side, and sundry livid and ash-coloured warts or tubercles were seated about the eye and upon the side of the superior portion of the nose. Some of these were denuded of their cuticle, and exuded an ill-conditioned ichorous serosity. The upper lip was much swollen, with a blackish excoriated streak extending from the nostril: the inner and inferior portion of the lip appeared livid, and upon the verge of mortification. There was considerable febrile excitement, hot skin, frequent and tense pulse, and generally considerable thirst. Latterly the febrile symptoms had become more aggravated than formerly, although the appetite had been but little impaired. Previously

to the disease attacking the face, the appetite had remained good, except at those times when the pains and inflammations commenced fresh attacks upon any parts of the body, at which times there occurred an aggravation of the febrile symptoms and disinclination for food.

I had previously seen the glanders and farcy in the quadruped race, and had read of its occurrence in the human family; and nearly my first inquiry upon considering the case was, whether they had ever owned any glandered horses. The mother replied that they had had four affected with the disease; three of them at the time of my visit, and that the first had died ten months previously, about the time that her son became diseased; that he was very fond of horses, and paid much attention to them; that the first one which died he took off, and assisted in opening and dissecting it; that for a day or two afterwards he was affected with great sickness of the stomach and disgust for food; that immediately after this a painful swelling appeared upon one of his fingers, which, however, never suppurated; that a similar affection next attacked the shoulder, then the knees and ankles, which latter places were frequently the seats of successive suppurations. The disease also affected his side, when it was supposed to be a pleurisy, and for which he was bled, but without relief: the matter from the suppurating parts was at first like that of a common bile, but soon became thin, yellow and watery, and mixed with blood; the disease thus successively invading different portions of the body; that when any part of the body first became affected it was extremely painful and tender to the touch, extorting cries and exclamations of distress from the sufferer; but that as the part became puffy and swollen the pain subsided in that part, and one or more places became affected in the same way and pursued the same course.

At the time I saw him, which was on the 30th of September, he was much emaciated, his feet swollen, tender and painful, and his hands similarly diseased, with the exception of the puffy swelling; the back of one of the hands, however, was red, swollen and painful. He was affected with a cough and the expectoration of purulent matter, which had existed anterior to the commencement of the other affection, and did not appear to form a necessary part of it. The sister was also affected with the same phthisical disorder of the lungs, but continued active and otherwise healthy.

I looked upon the disease as so utterly hopeless and incurable, that I merely prescribed a little cooling and anodyne medicine; stating to the parents the nature of the complaint, which was the first intimation they had ever received that the disease was *glanders*, in which belief they now fully concurred.

Oct. 2nd. Wishing to observe the progress of this disease, I again visited the patient to-day. The swelling of the face had increased and extended to the opposite side; the other eye was now also nearly closed by the progress of the tumefaction; a swollen ridge extended from the summit of the nose diagonally to the hairy scalp. The leaden or ash-coloured tubercles of the skin had increased in size and number; about these tubercles the skin was of rather a dark and purple hue; the face generally was pale, smooth, and shining; the upper lip was more tumid and livid, the excoriated surface nearly black, and covered with a bloody serosity. Livid discolorations had also taken place in some of the swollen fingers, and the right elbow was likewise purple and livid, and studded with similar eminences or tubercles as those upon the nose and face. The limbs were extremely tender, and touching or moving them gave the patient great pain. The brain was evidently considerably affected, the intellect impaired, and consciousness yielding to the progress of the disease. Occasionally he would start from his drowsy slumber with a scream of ineffable distress. His pulse was more feeble and frequent; febrile heat unmitigated; breathing shorter and more laborious, attended with a rattling in the throat; decubitus dorsal; lower extremities drawn up towards the abdomen, with inability to extend them, probably from the pain.

Oct. 3d. He died before day this morning. The body was not examined post-mortem; and could even the consent of the parents have been obtained, the operation would have been dangerous in the extreme.

The probability is, that the glanders is not communicable from the horse to the human family, except by inoculation. Upon this point, however, more extensive observation is required. We know that it is communicated among horses by permitting the sound to associate with the diseased; but whether by the breath or by eating in the same manger, and thus receiving the infectious saliva into the stomach, or by the contact of the morbid matter itself with the skin, are questions not so easily determined.

In the case under consideration it was remarked above, that immediately after the operation of opening the dead horse the lad was affected with nausea, which continued for a day or two; and that in a short time a swelling appeared upon one of the fingers. The bronchi at that time were in a state of chronic inflammation, with the daily expectoration of purulent matter; it is possible, therefore, that the strong exhalation from the cavity of the horse, impregnated with the morbid and specific matters of the disease, by coming in contact with

the irritable lining of the air cells, might, in this way, have found admission into the circulating system. A more probable presumption is, however, that in his rough and awkward dissection the lad scratched his finger with the knife—a fact confirmed by the statement of the father, although it had escaped the notice or recollection of the patient. However this may be, the character of the disease, and the circumstances connected with its origin, leave no doubt in my mind respecting its identity.

That this disease is so seldom remarked as occurring in the human subject, is not, probably, owing to its non-existence, but to its not being recognised. How often does it not happen that diseases of ordinary occurrence are mistaken and confounded? Thus I have known pregnancy mistaken for dropsy; the accumulation of fæces in the colon for enlargement of the spleen; colic for hepatitis; chronic hepatitis for rheumatism; scarlatina for common synocha; hydrothorax for dyspepsia; and the suppressed cough of pleurisy for hiccough, and treated with ether and laudanum, when the man was dying with inflammation.

The consideration of this case presents several points of resemblance to those produced by the absorption of putrid and other animal poisons, arising from the application of such matters to ulcers and excoriations of the body, or to wounds in dissection; with this addition, that in the case under consideration there was present a specific virus, contaminating the system, but unlike many morbid poisons, observing no crisis, having no tendency to terminate in convalescence, and whose only issue is death. It also bears considerable resemblance to the *malignant pustule*, so well described by Dr. Pennock in the number of this Journal for November, 1836. Something like this may also be observed in certain cases of scarlatina; when, as might be reasonably supposed, the danger had passed and convalescence was established, the morbid poison appears to take fresh hold upon the system; indolent and malignant swellings appear about the throat and jaws; the nostrils are excoriated and distil an ichorous sanies, corroding the parts with which it comes in contact, and every opening and orifice of the body becomes a loathsome mass of disease. It is rare, under such circumstances, that a second and favourable crisis takes place, but the patient sinks, worn out and exhausted.

So far as my information extends, the foregoing is almost the only case of glanders occurring in the human subject that has been recorded on this side of the Atlantic. A notice of a few cases in Europe may be found in the periodicals, and in preceding numbers of this Journal; another is also noticed in one of the numbers of the New York Medical and Physical Journal. Similar instances may have been observed

by other American physicians; if so, they should be communicated for the benefit of the medical profession, and perhaps for the cause of humanity. It is at the same time more than probable that the disease has in many instances been communicated, and even proceeded to a fatal termination, without its character ever having been suspected. The disease is not an ordinary one, incidental to the human family, nor does it fall within the regular study of the medical profession; and it is possible that comparatively few physicians have ever observed the disease even in the brute creation. In the case above mentioned, the nature of the disease had never been suspected until after a lapse of ten months from the period of its commencement. And it is very possible that it might have passed unrecognised by the writer of this article had he seen it at an earlier stage, whilst as yet it was confined to the limbs and extremities, where it might have been mistaken for mercurial rheumatism or some anomalous disorder.

The fact of its being communicable to the human system entitles it to a place in our nosologies, text books, and practical systems; and I hope that the editor of the American Cyclopedia of Practical Medicine and Surgery, will give it a place in his valuable work, and bestow upon it that consideration which its terrific, loathsome, and fatal character demands. As yet it is considered as one of the absolutely incurables, whether in the brute or human race. It is possible, however, that talent and skill may hereafter be directed to some remedy or mode of treatment that shall disarm it of its terrors and triumph over its fatality.

Mobile, May, 1837.

ART. VI. *Reports of Cases of Insanity, treated at Friends' Asylum, near Frankford.* By R. R. PORTER, M. D., Resident Physician.

Mind has been regarded as a distinct faculty, endowed with capacities for entering into different states, without involving correspondent changes in the nervous system. The advocates of this doctrine, among whom may be placed nearly all those who have written on mental philosophy, admit that there is a general and mysterious connexion between mind and matter, but suppose that the operations of the former are independent of the latter. On the contrary, the adherents of the phrenological system, together with others who have investigated the phenomena of mind, contend that all its powers and varia-

tions are determined by the condition or modification of separate portions of cerebral structure, and that the union between the two is so intimately and reciprocally compacted as to render it impossible to affect one, without the other undergoing a like and simultaneous change. This doctrine of the dependency of thought on organization, was maintained by many physiologists, long before the days of Haller, who believed the brain to be the seat of intelligence, yet supposed its special powers could never be located, owing to the intricate nature of the nervous system. Of late, the principle that the brain is the exclusive instrument of intellect and feeling, has attracted much attention among physiologists and anatomists; and believing it to be supported by reason and observation, we shall briefly state some of the arguments adduced in its favour. We are more anxious to do so, as it is not uncommon to hear physicians speak of insanity as purely a mental affection; and, in consequence of this view of the subject, regard the employment of physical agents in its treatment either as hazardous or useless. In more than one instance we have been requested by medical men, strongly imbued with the notion of the distinctness of mind and matter, to withhold the applications of medicinal means in the treatment of their insane relations, because it was supposed they would only occasion pain and torment, without a prospect of doing good. Further, a manager of a celebrated lunatic institution, lately informed me, that several years ago he and his colleagues were so prejudiced against the use of medical measures, as to object even to the election of physicians in their board, being fearful they might effect some innovation. At present, both medical and moral means are used; and the increased number of cures being nearly fifty per cent. more than formerly, fully proves the danger of regarding insanity in the light of a mental affection, requiring only moral treatment: therefore we proceed to show the intimate union between intelligence and organization. If the thinking and feeling principles acted independently of matter, they should not be suspended by the abstraction of stimuli from the brain, as happens during sleep and swooning: in the latter, the offices of the brain are interrupted by the equability of the circulation being suddenly disturbed; and are resumed only when the inequality is restored. It may also be added, that the effects which occur in the brain, take place in other parts of the body, whose functions, likewise, are suspended by the same influence.

Certain diseases of the brain, such as inflammation of its substance, apoplexy, and palsy, act as immediately upon the mental faculties, as do gastritis, pneumonia, and hepatitis, upon the functions of the stomach, lungs, and liver; why, therefore, not say with equal propriety, that to the brain belong the powers of understanding and

judgment; that indigestion and dyspnœa are referred to their respective organs? Analogy further shows, that in this life, mind displays its forces by means of corporeal organs, inasmuch as all the senses of vision, smelling, tasting, and hearing, require an organic apparatus for their respective manifestations; and the results of comparative anatomy, when fairly examined, tend to establish the same opinion; they prove that intelligence and propensity are proportionate to the size of the cerebral organs; and when in any animal new distinct portions of brain have been discovered, observation in numerous instances has shown they originated separate and distinct powers or affections.

Again, there are no instances where the integrity of thought was preserved on the destruction of the brain. Mechanical injuries of its substance, of a limited nature, frequently, if not invariably, affect the health of one or more of its functions. The power of pressure on an exposed surface of dura mater to suspend consciousness, is well known; in many cases of congenital idiocy, the cerebral structure is but partially developed, and the displays of intelligence and sentiment are also limited; hence writers on insanity often describe idiots remarkable for religious feeling, for mechanical talent, and musical powers; while in those instances where the brain is very much below the usual size, there is almost an entire absence of reason, sentiment and desire. All of these phenomena accord with the doctrine of the brain being the instrument of the mental powers, and militate strongly against the supposition that mind and matter are distinct entities, as taught either directly or indirectly by metaphysicians; neither by it can be explained the effects of alcohol, of narcotics, and of local abstractions of blood from the brain, which sometimes almost instantaneously calm the most furious maniac.

The mental phenomena attendant on childhood, their deterioration in old age, the successive expansion of the brain, and the destruction of particular mental powers by certain lesions of the cerebral mass, are at variance with the notion of mind operating separately from organization. If the mind operates separately from organization, its exhibitions should be as perfect during infancy as in mature years, and should remain as active when the body is tottering with old age as they were in the vigour of itshealth, but daily observation declares to the contrary. The facility with which knowledge is acquired bears uniformly an exact relation to the size, structure and healthiness of the brain. In childhood the mental capacities are weak and limited, the mind cannot grasp forcibly at truth, it seems only adapted to the reception of facts; but as the cerebral organs enlarge, and acquire consistency, the faculties of judgment and reason are expanded, and

are enabled to collate into useful and stupendous systems of knowledge the important truths collected in former days; but as life declines, the nervous, like the osseous, vascular, and muscular systems, loses pliancy and vigour, while its functions with theirs become deteriorated. We repeat that the progressive developement of the mental phenomena, their enervation by disease, and decrepitude, and the characters of idiocy, afford strong arguments in favour of the truth of the proposition we have been advocating; for none will deny that the manifestations of understanding, feeling, and desire, correspond to the growth of cerebral matter, and that they undergo peculiar changes in the decline of life.

I shall now go on to illustrate by cases some of the diseases of the brain, giving rise to the different forms of insanity, beginning with mania.

Case I. *Mania, preceded by partial insanity, cured by local depletion.*—J. H. æt. 18, a farmer, of New Jersey, was admitted on the 17th of March, 1835. The certificate states the duration of the case to be ten months, and that it supervened immediately on an attack of influenza, attended with sore throat and great pain in the head. On the 8th of May* he was suddenly seized with a paroxysm of mania, and soon became so violent that it was difficult to restrain him from injuring himself and others.

9, P. M. *Physical state.* Muscles flabby, large; eyes gray; hair brown; stature tall; complexion fair; motion quick; tongue moist; countenance wild, daring; face pale; pupils dilated, fixed; no abdominal tenderness; refuses food and drinks; snaps at every thing carried near the mouth; pulse small, round, cannot be numbered owing to muscular agitation; respiration hurried; heart's motion quick, rapid, tumultuous; makes great efforts to free himself of restraint.

Mental phenomena. Thoughts incoherent, irrational; remarks obscene, insolent, profane, vindictive, uttered in a loud and boisterous tone; alternately cries, ejaculates short sentences, swears, laughs, sings and raves furiously. Attention cannot be fixed; abuses all around him. Ordered ℥xi. of blood taken from occiput; directly after the operation he became calm, rational, and declared the head was relieved of pain and pressure; begged the abstraction of more blood. Room darkened; cold cloths applied to the shorn scalp; patient kept in the tranquillizing chair; diet farinaceous.

* Previous to this period I had not commenced my notes on the case, having entered the asylum as resident physician only two days before. The aspects of the case, I understand, have altered little or none since his admission.

11*th.* Since the 8th has been calm, but dull and unwilling to converse. This morning heat of scalp augmented; sensibility of pupils dull; tongue coated with whitish fur, moist; constipation; pulse 69, full, strong; obedient, grave, fearful of some impending evil; conversation rational; consciousness of late events indistinct. Cupped ℥vi.; give ol. ricini ℥ss.

14*th.* Last night pulse was 82; mind confused; memory of persons and of transactions more impaired. Was cupped ℥viij.; blisters were put on the ankles. 10 A. M. heat of scalp increased; countenance wild; no pain in head; face alternately flushed and pale; appetite moderate; pupils contracted; bowels confined; pulse 70. At times he screams loudly for a few minutes, but soon controls his passion; wanders in speech; ignorant of his situation; recollections of the past very turbid. Cupped ℥x.; scalp covered with ice; give ol. ricini ℥ss. Blisters dressed with savin cerate.

16*th.* At the dawn of day was found dashing himself against the walls of his room, and covered with blood. 8 A. M. sensibility much diminished; muscular strength rather increased; scalp hot; pulsations of temporal and radial arteries small, weak, rapid, 127; heart's motion tumultuous; countenance ferocious; pupils nearly natural; tongue coated with yellowish fur; skin of body moist; face flushed at intervals; squinting; no strabismus; conjunctiva injected minutely; muscles of face in constant motion; indifferent to sounds; features mobile; eyes shiny; respiration easy; deglutition easy; no abdominal tenderness; bowels moved yesterday; under constant muscular agitation; eats ice with avidity; refuses food. Every act and expression highly extravagant; heedless, or unconscious of surrounding circumstances; regards his attendants as enemies, and invokes terrible imprecations on them; swears; bites; distorts every part of the body in anger; vociferates disconnectedly to the extent of his voice. Cupped ℥ix.; soon after the pupils were dilated; face pale; mind tranquil; body less agitated and confusion of intellectual faculties much diminished. Directed all restraint taken off, and the patient put to bed. *Evening.* He had at noon another furious paroxysm, which continued three hours; exhaustion followed, when the face was pale, death-like; pulse wiry; body covered with cold perspiration; muscular strength reduced; with difficulty maintained an erect posture; voice low, feeble. Ordered him put to bed, and to take egg and milk beaten up together.

17*th.* Slept part of the night; heat of scalp normal; eye lids red; face pale; features wan; appetite bad; eyeballs restless, squinting; muscles quiet; pupils natural; pulse 104; tongue red at edges; bowels moved; complains of weakness. Mind composed; no recollec-

tion of yesterday's events; listless in conversation. Blisters dressed with savin cerate; diet, animal soup, milk and eggs.

20th. Improving; has slept soundly for several nights; countenance dull; no cephalalgy; heat of scalp normal; pupils contracted; face pale; squinting continues; stronger; skin of body moist, oily; appetite better; bowels regular, stools yellow, consistence good; pulse 86; tongue moist, clean; converses reluctantly; filial feeling suspended; has no desires; performs every thing mechanically. Knows not where he is, or why brought here. Blisters kept discharging.

22nd. No pain in the head; sleeps well at night; temperature of body uniform; countenance dull; pupils rather contracted; tongue furred; respiration pure, chest anteriorly resonant on percussion; pulse 70; indifferent about food; muscular movements slow and hesitating. At times is obstinate; easily excited to anger and resistance. Saw his parents, seemed pleased; manifested no interest about domestic concerns; had no desire to return home. Give ol. ricini ℥ss.

27th. Was kept awake last night by pain in the head; pupils contracted; heat of scalp augmented in front; countenance grave; tongue pointed, red at the edges, moist; face pale; heat of body natural; pulse small, weak, 64. Some epigastric tenderness on pressure; bowels regular; appetite improving; mental powers still dull; unable to recall the names of attendants; indifferent about time, place, and circumstances; never smiles, or speaks of his own accord; questions are answered slowly, and in monosyllables. Cupped over abdomen; rides and walks out daily; blisters are healed.

June 9th. He has his natural sleep; pupils normal; scalp pleasantly warm; skin of body perspirable; tongue clean; countenance sedate; pulse 60, full, strong; bowels regular; slow in speech and muscular movements. Perception of recent events more acute than his conception of past ones. While riding out to-day he made several voluntary remarks about the scenery, prospects of the crops, &c. when his countenance became lively and cheerful for the first time since his illness. Diet full.

27th. For more than two weeks has been engaged in various duties on the farm; works industriously and eats heartily; still there is a gravity about him, an air of surprise when spoken to, an hesitancy in answering questions, which lead us to fear his convalescence is not perfect.

July 16th. Discharged, well.*

* The father of this patient thought insanity was a mental affection, and as such, beyond the control of medicine; he, therefore, had resolved to build a small hut, on a corner of his place, and there confine his son, by "*chain and ball*," till death

Remarks. Mania, when fully confirmed, is generally supposed to be permanent and continuous for days, weeks, and even months, and finally, if neither restoration nor dementia ensue, to run into chronic mania; but such forms of the disease must be comparatively rare, as we have never met with a solitary instance of the kind. The case which has been, and those to be detailed, assumed evidently a paroxysmal form, and were accompanied with well marked intermissions, of longer or shorter duration; during these, however, the brain continued in an excitable state, which prevented the mind from recovering its wonted clearness and composure. It will be observed that the paroxysms in this case were fewer than in the second case, and of shorter duration than in the third case, while in the fourth case the paroxysmal character was lost on the supervention of fever.

The maniacal fits were all attended with symptoms indicative of greater or less determination of blood to the brain: such as heat of scalp, pain in the head, coldness of the extremities, rolling of the eyeballs, injection of the conjunctiva, flushed face, beating of the carotids, increased frequency in the pulsations of the heart, of the temporal and radial arteries, which pointed out the propriety of local depletion, of the application of cold to the scalp, and of heat and rubefacients to the lower extremities. By these means the violence of the paroxysms was uniformly diminished, and their recurrence was prevented by taking blood from the scalp during the intermissions.

Case II. *Mania; duration three days; not constitutional; supervening on, and alternating with, partial insanity; followed by fever; cured.*—Mr. S——, a Friend, of Philadelphia, by trade a mason; entered on the 23d of May, 1836. During childhood much given to masturbation; general health good; business habits active; disposition kind, filial; mental capacities ordinary. His friends date the origin of the disease from the period of its violence; though for several months they say he has been less ardent in the pursuit of wealth than formerly; more grave in character; has also shown an unusual concern about his bodily health, and was often seized with a dread of dying, while apparently in good health. In the spring of 1835, having made, as he supposed, ample arrangements for meeting all his indebtedness, he undertook the erection of a house; at first his liabilities were promptly met, but unexpected difficulties were encountered in adjusting the second or third instalment, at which he was so much worried and perplexed, as to doubt the propriety of the under-

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should relieve the unhappy sufferer; but fortunately, through wise counsel, a different course was pursued.

taking; for he thought he had commenced what he could never accomplish; nevertheless, it was finished apparently to his satisfaction; but the mental excitement, which had continued for months, remained after the cause had ceased; in fact, it seemed to increase, inasmuch as he was now under the influence continually of groundless fears respecting his health and pecuniary matters; the former, he thought, was so precarious, as to justify the abandonment of his trade: at this time his appetite was bad, his digestion irregular, and he allowed himself but little time for sleeping. On the 20th of this month the fears of his friends were increased by some act of violence which he committed. They endeavoured to persuade him to remain at home, (for he was in the habit of spending most of his time in walking about, without any special object in view;) but persuasion being useless, compulsion was resorted to, when he got highly excited, and struck his father severely in the face, and escaped from the house, and ran into a store, where he immediately commenced to tumble the goods into the street; was overpowered by numbers, carried home, and was calm some hours. The paroxysm again came on, when he resisted violently, and escaped the second time, and was next found on top of the chimney, pulling off and hurling the bricks into the street, regardless of the safety of those passing by.

Present state. Five hours after admission, stature small; muscles large, compact; hair fine, brown colour; eyes blue; face ruddy; motion quick; head small; anterior developement large; heat of scalp increased laterally and posteriorly; pulsations in temporal arteries 128, turgid; front part of head painful, and "feels as if it was very much enlarged;" conjunctiva injected; pupils contracted, sensible; countenance stupid; tongue moist, tumid, furred; respiration easy; no epigastric tenderness on pressure; frequently sighs; pulsations of radial arteries 128, strong; hands and feet warm.

Mental Phenomena. He remained quiet for half an hour after being placed in a room, then began to pound violently against the door, at the same time screamed, cursed, and raved. In a few moments every thing about him was disturbed and partly destroyed. When the nurse entered the room he was attacked ferociously, and though a powerfully strong man, it was some minutes before he could control the violence of the patient. The paroxysm continued one hour. At present he has no recollection of the late excitement, though he knows he is subject to "sudden strange impulses:" fearful of being murdered, implores protection. Cupped over occiput; syncope induced after the loss of ℥iii. of blood; room darkened; diet farinaceous.

24*th.* Slept till 4 o'clock this morning, then rushed out of bed, stripped himself naked, and attempted to break the door by running and throwing himself against it. With a demon-like countenance he resisted the attempts of the nurse to enter his room. When overcome, he poured forth volleys of yells, curses, and hideous sounds. In an hour was composed, rational; expressed regret over the past "misconduct." The calm continued about thirty minutes, and was succeeded by another paroxysm of mania. At present, 10 A. M., rational; memory confused; by an effort recalls many of the events of the morning: no cephalalgy; hair dry; scalp loose; skin of forehead soft; scalp generally hot; conjunctiva minutely injected; pulsations of temporal arteries 84; appetite strong; pupils contracted; flashes of light before the eyes; countenance sane; tongue clean at the tip and edges, rest furred, pasty; bowels moved yesterday; skin of body pleasant; pulsations of radial arteries strong, 84; heart's motion regular. Apply cold cloths to the scalp; give ol. ricini ℥ss.; and cold acidulated drinks.

25*th.* Last evening had two short fits of raving, followed by confusion of thought and loss of memory. 7, A. M., slept till three o'clock this morning, when another paroxysm of excitement came on and continued for an hour; face is now of a bluish-red colour; eyelids blood-shot; pupils dilated; scalp hot; tongue tumid, pasty; pulse about 120; has constant eructations; skin of hands moist; abdomen not tender on pressure; countenance wild, maniacal; beating of the temporal and carotid arteries; muscular actions of the body violent; refuses food and drinks; shakes the head, stamps the feet, distorts the body, cries, swears, vociferates loudly, endeavours to bite and strike all who approach near him; thoughts wild, incongruous, and incoherent. Cupped over the abdomen; syncope was induced; give pil. hyd. gr. i. t. d.

28*th.* Since the 25th inst. he has had several maniacal paroxysms. They come on about the dawn and close of each day, and were characterized by a disposition to go naked, by preternatural muscular strength, by ferocity of action, volubility and loudness of speech, incoherence of ideas, horrible blasphemies and incongruous remarks. During the intervals the mind was bewildered and irascible. 3, P. M., skin of forehead of a dark red colour, cool; scalp loose, hot; ears cold; pupils contracted; conjunctiva less injected; eyeballs restless, sunken; emaciated; tongue dry, of a brownish colour, rough, less tumid; heart's motion 96, strong; skin of hands and feet cold; capillary circulation weak; pulsations of radial arteries 96, strong; abdomen tender on pressure; bowels confined; refuses food and

drinks; deglutition has not been difficult; respiration easy; memory much impaired; intelligence languid; thoughts erratic; answers are irrelevant; mistakes friends for enemies; vindictive and vociferous. Cupped over abdomen ℥iv., pulse fell to 88; give oil ℥ss; apply warm bricks to the feet and fomentations over the abdomen.

29*th*. Slept soundly till 3 o'clock this morning; from that time noisy till after daylight. 9, A. M., scalp now hot; eyeballs more sunken; countenance more lively; tongue moist; anorexia; frontal capillary circulation more active; pulsations of temporal and radial arteries weak, 96; pupils dilated; conjunctiva moderately injected; teeth dry; gums spongy; tongue moist, furred with a loose white coat; heart's motion irregular; hands cool; tenderness of abdomen on pressure remains; muscular agitation continues; fearful of being "anatomized;" cannot describe his feelings; remarks are contradictory, and have little or no relation to the questions proposed. Cupped over the belly ℥iii.; feet to be bathed frequently with brandy and red pepper; stop pil. hyd.

31*st*. Has had no maniacal paroxysm for 48 hours. Last night blisters were applied to the ankles, but they scarcely reddened the skin; slept part of the night; "no pain in head;" eats better; heat of scalp not much increased. The events of the last ten days are indistinctly remembered; complains much of exhaustion, and is scarcely able to walk across the room.

June 1*st*. Scalp loose, heat normal, hair dry; pulsations in temporal and radial arteries 100, regular; face of a dull red colour, sometimes flushed; pupils natural; tongue moist; appetite improving; countenance at times animated; bowels regular; skin of hands and feet pleasant. Intelligence still dull; during conversation his ideas become so confused that he is unable to finish a sentence correctly; fears of danger are ever present. Of his own accord got up, dressed, and walked into the day room. Diet, vegetable.

19*th*. During the last three weeks he has regained strength very slowly; for the most part has slept soundly at nights. Heat of scalp has occasionally been augmented; headache was often present, especially after restless nights; appetite moderate; bowels regulated by laxatives; pulse has been variable, sometimes up to 110, then down to 80; skin of hands cool; countenance has been grave; much troubled with eructations; contraction of pupils; hesitancy of speech and slowness of muscular movements. He never offers a spontaneous remark; stands for hours leaning on the window-sill, as if in deep thought; yet, when asked, is unable to tell the scope of his meditation. Occasionally he has been vindictive; always sullen; shows no interest in any employment or amusement which he undertakes. Cupped ℥iv.

July 17th. Since the date of last note there has been an increase of physical and mental listlessness; actions for the most part seemed mechanical; sleeps badly at nights; has had frequently pains in the head; bowels confined; pulsations of temporal and radial arteries generally have been over 100; pupils more contracted; conjunctiva injected; heat of scalp augmented; appetite diminished; countenance angry, face often flushed; tongue clean; discontented, fretful; regards all around in the light of enemies; has manifested a morbid anxiety to return home. To overcome the pain in head, heat of scalp, excitement of pulse, &c., he was ordered to lose small portions of blood from the scalp frequently, in all above ℥l.

Sept. 3d. On the 23d of August, fever of the continued form set in, and was kept up till yesterday. It was marked by frequency of pulse, heat of skin, great thirst, epigastric tenderness, with rose-coloured spots over the abdomen; suffusion of eyes, dry tongue, sordes on teeth. At first the bowels were confined, but towards the termination of the fever the stools were frequent and coloured with blood, no pain; after each one he declared he felt stronger. The mental powers were much depressed throughout the progress of the fever. He was cupped several times over the abdomen; sponged with cold water; cool mucilaginous enemata were often administered; cold cloths kept to the head, and cold acidulated drinks freely allowed. This morning the skin is cool; pulse about 70; tongue cleaning, moist; takes moderately of food; countenance cheerful; intelligence more active; speaks rationally of his present and past states, anxious to see his friends, and to return home *whenever his strength will allow him.* Diet, vegetable.

15th. He walks and rides out daily, and enjoys himself; says that he has during his illness suffered greatly from pain in the head. Appetite strong; sleeps soundly; digestion regular.

20th. Discharged well, and continues so up to this period, June, 1837.

Remarks.—At the commencement of the disease of Mr. S., depletion could be practiced only to a limited extent, owing to syncope coming on after the loss of very small portions of blood. The consequences were, that although the morbid changes in the brain were partly restored at an early period, still some of the cerebral organs remained impaired and gave rise to partial insanity, which was tedious in its course and difficult to overcome. In fact, there was no improvement in the latter until after the subsidence of the febrile excitement, when the mind immediately began to recover its usual tran-

quillity, and correctness of perceiving and comparing the objective and subjective relations of life.

It is easily understood how fever awakens new energies in, and imparts additional vigour to, a brain whose vital forces have been exhausted by long continued disease, as occurs sometimes in dementia, but we cannot comprehend the method whereby insanity was superseded in the above case by the febrile actions, unless we say the permanent irritation of the stomach operated on the principles of revulsion, and thus withdrew nervous and vascular excitement from the cerebral organs. This result, it is not reasonable to suppose, was brought about by the loss of blood during the fever, because the quantity was too inconsiderable, compared with that abstracted on former occasions.

Case III. *Mania, complicated with gastritis, constitutional; cured.* —Mr. ——, of New Jersey, a widower, was admitted on the 21st of October, 1835, æt. 45, a Friend; by trade a tanner; habits in business industrious; disposition penurious, supercilious, and irascible; mental capacities limited; religious feelings moderate.

Parentage.—His father, at the age of 40, was suddenly seized in the night with apoplexy; convulsions ensued, and death took place on the third day. The mother suffered several attacks of insanity, in one of which she died; a sister of her's was also deranged, and made several attempts at suicide; and a daughter of this sister, in a fit of derangement, destroyed herself. The history of the paternal grandfather unknown. The grandmother on the same side died of apoplexy: she had a son who died crazy at the Asylum. Mr. —— had three sisters, two of whom were deranged; the youngest of three brothers died delirious at the age of 16, the second is subject to paroxysmal insanity; the third was never crazy.

24*th. Physical state.*—9, A. M., stature tall; complexion dark; motion quick; muscles small, firm; cheek bones prominent; eyes blue; hair fine, of a light brown colour. Since his admission, has been excited at times, wakeful at nights, discontented and fretful; at present these symptoms are increased. There are also restlessness of the muscular system, heat of scalp, wildness of the eyes, frequency of pulse, contraction of the pupils, with some incoherence of expression, and a disposition to assume fictitious characters. 2, P. M., heat of scalp much augmented; tongue reddish, moist, granulated, frequently protrudes and retracts it; skin of body hot; radial pulse over 100, soft, weak; "no pain in head," though he often compresses the scalp with his hands; deglutition easy; features wild, distorted; conjunctiva not injected; abdomen tender to pressure; stomach not irritable; feet

and hands cool; thirst great, refuses food; respiration easy; chest resonant on percussion; heart's motion weak, regular.

Mental signs.—He vociferates; thoughts evanescent, have little or no relation to his condition or to surrounding circumstances; they pass rapidly from subject to subject without order or connexion; expressions sententious, abound in rhymes, incoherent, ridiculous; thinks he is surrounded with devils and other aerial spirits; flies are transformed into demons; often ejaculates the words hell, fire, at the same time pressing strongly against the epigastric region. Room darkened, scalp shaved, ice applied to it; blisters on the ankles; cold acidulated drinks freely allowed.

25th. Last evening he was much exhausted; body was covered with cold perspiration; pulse very weak; mental excitement was augmented; raved all night. 8, A. M., scalp very hot; pupils contracted to a mere point; tongue red, moist; fauces dry; often exclaims *I am burning up*; temporal pulse 90, weak, soft; feet cool; skin of body pleasantly warm; countenance variable, generally ferocious; face pale; eyes glisten; hearing acute; smelling obtuse; vision perverted; sensibility diminished; muscular strength augmented, with great muscular mobility. Had a natural stool last night; abdomen tender to pressure; respiration humid; heart's motion weak; ejected from the stomach a worm four inches long. Thoughts disjointed, unnatural, fugacious, ludicrous; now performs an Indian dance, then goes through the manœuvres of a sailor; next paces the room in military pride, or is suddenly seized with a religious impulse, when he exhorts or falls prostrate on the floor, and begins to pray. This grotesque scene is heightened by violent cries, gesticulations, hideous yells, laughs, dismal groans and horrid blasphemies. The blisters drew well. Ordered him confined to bed by means of straps; cold cloths kept to the scalp; cold water given freely.

27th. Yesterday the maniacal excitement was diminished; head painful; pupils less contracted; 1 gr. of sulp. morph. was applied to the blisters, but failed to cause sleep. To-day more unwell; pupils much contracted; tongue of a dark red colour, dryish; hands cold; pulse small, weak, 85; abdomen tender on pressure; bowels moved by an enema; eyeballs restless; adnata clean; countenance maniacal, anorexia; passes urine freely; heart's motion weak, regular; great mobility of the muscles of the upper part of the body; face pale; often presses the hands against the temples; feet cool; all the external senses exalted or depressed; fauces dry; respiration hurried; eyeballs prominent; no injection of conjunctiva; no irritability of stomach; muscles of face distorted; corners of mouth filled with frothy saliva;

refuses food, takes cold drinks with avidity. Expressions boisterous, wild, incongruous, erratic; now religious, now profane; now dramatic, now poetic; now nautical, now pugnacious; endeavours to make his actions correspond to these multifarious dispositions, but before one is ended another is begun. Last night a blister was applied between the shoulders: ordered scalp rubbed with lin. cantharides, and hop fomentations placed over the abdomen.

28*th*. More rational; slept some last night; face sallow; forehead contracted; eyes sunken; face oily; heat of scalp normal in front, increased behind. Bowels moved twice by grs. vi. of calomel; fauces covered with tenacious mucus, to dislodge which he makes violent attempts. Says that he was much better this morning; pupils still contracted; countenance sane, haggard; eyeballs restless; tongue moist, edges furred with white; papilla enlarged; no actual headache, but vertigo on raising the head; pulse 80, small. Suddenly, without any external cause, he complained of pain in the head; the mind wandered, he became loquacious, boisterous, maniacal; abdomen less tender to pressure; feet cold; tares his clothes; misnames his attendants, some of whom he regards as old friends, others as inveterate enemies; strips himself naked; language highly offensive. Continue the applications of lin. cantharides to the scalp, and give him small quantities of arrow-root.

29*th*. After I left him yesterday he got worse and worse, till scarcely a ray of reason was perceptible; the raving continued till after midnight. 8, P. M., heat of scalp very much increased; pulsations of temporal arteries quick, strong, 100; pupils contracted; forehead contracted; eyes glisten; features wild; skin of body warm, dry. Bowels moved several times last night; radial pulse quick, frequent; often presses the hands against the temples, and shrieks out as if in pain; also compresses the epigastric region; tongue moist; distorts the face; great muscular agitation of the whole body; mental expressions are still wild and extravagant. Apply ice to the scalp, 1½ grs. of morph. to the blisters.

30*th*, 6 P. M. He raved the former part of last night, and slept some towards morning; awoke partly rational, and has continued better all day, till within two hours; now in a paroxysm of mania similar to those described. Ordered 1½ grs. of morphia, given by the mouth, and grs. ii. to be applied to the blisters.

Nov. 1*st*. Yesterday the pulse was about 70, weaker than it had been; head was painful; tongue moist; skin cool; feet swollen; legs in an erysipelatous state; hearing very acute; sight perverted; mind more composed. This morning, heat of scalp augmented; countenance

furious; pupils very much contracted; tongue dryish; forehead contracted; eyeballs rolling; muscles of mouth distorted; pulsations in temporal and radial arteries weak, soft, small, 100; heart's motion weak; tongue covered with white frothy mucus or saliva; refuses food and drinks; snaps at any thing carried near the mouth; general sensibility lessened; great muscular mobility; feet and hands cold; hearing acute. He slept the fore part of last night; at midnight began to rave, and has continued to do so from that time to this, almost without intermission. *Noon*—He still raves; tongue is dry, brownish; abdomen very tender on pressure. Ordered ℥iss. of blood taken from abdomen, to scarify it freely, and rub liniment cantharides over the incisions; grs. v. sulph. morph. applied to blisters.

2nd. Yesterday he had a bloody stool, with tormina, tenesmus, and some vomiting. He raved till 1, A. M., when consciousness returned, and he conversed rationally for a few minutes, complained of drowsiness, then fell asleep, and slept till after daylight, when he was perfectly rational. 8, A. M., complains of exhaustion; face of a waxen white colour; strangury; very drowsy; heart's motion weak; tongue moist; pupils more dilated; muscular agitation ceased; skin moist; nausea, occasionally vomits. *Evening*—He has slept most of the day; now drowsy, falls to sleep while conversing; passes large quantities of urine, attended with some pain; feet still swollen; answers questions correctly. He has a proper conception of his present and past states; fearful of a relapse; irritable, captious, the most delicate attentions fail to satisfy him. Ordered the patient to be placed in another room.

5th. On the third instant his tongue was dryish, now moist; no tormina or tenesmus; when at rest has no pain in head; face pale, sallow, emaciated; pupils nearly natural; thirsty; pulse about 80; swelling of legs subsided; hearing more obtuse; sensibility much increased; complains of blisters and of muscular soreness; appetite moderate; constipation; totters when walking; for several days has had frequent returns of vomiting; sleeps soundly at nights; irascible and peevish. Blisters dressed with savin ointment; give him ol. ricini ℥ss. Diet, animal soups, black tea, bread and butter.

10th. During the last five days has been improving: now in the day room. He is more excitable towards evening; sleeps soundly for the most part; pulse 60; appetite moderate; hearing obtuse; frequently at nights has unpleasant dreams; irritability of temper subsiding; conversation, if sustained for any length of time, causes pain in head. Diet full. Blisters healed.

13th. Restless nights (which he occasionally has) are followed by

pain in the head, and an increase of irritability of temper; bowels regulated by laxatives; appetite strong; hearing very obtuse. Rides and walks out daily.

Dec. 1*st.* Discharged, well.*

Remarks.—During the progress of this case the stomach became involved in disease, and symptoms of gastritis appeared; while at the same time the morbid actions of the brain were for a short period increased. This complication is not an unusual occurrence in mania; and though it places the life of the patient in more danger, it is generally, by careful management, successfully dissolved, when the maniacal symptoms abate and convalescence often speedily ensues, as seen in this and in the second and fourth cases.

The weak state of the pulse of Mr. —— forbid the use of cups, except to a very small extent. On the propriety of depletion we are governed generally by the pulse; but if unequivocal signs of cerebral congestion or inflammation are present, with high maniacal excitement, topical blood-letting should be resorted to, without strict regard to the condition of the pulse. Confirmatory of this remark, we have unhappily met with more than one illustration where the lives of our patients, it is feared, were sacrificed by a dread of depletion.

Obstinate wakefulness is one of the most constant symptoms observed in mania: it often continues for many days and nights in succession, without that exhaustion following which so commonly happens in other affections. To relieve it, if not contra-indicated, anodynes should be given after depletion, and sometimes without, either by the mouth or applied to blistered surfaces, as was done in the third case. Here the effects of the morphia were seen for more than thirty-six hours after its application, during all of which intense drowsiness continued, and upon its subsidence he rapidly recovered. At the same time his hearing, which was previously very acute, became more and more dull, until lost almost in deafness.

Case IV. *Mania; followed by fever, with oppression of the mental powers; cured.*—Mrs. B. A. S., of Pennsylvania, æt. 26, a Lutheran, entered June 7th, 1836; disposition kind; mental parts strong; careful in the performance of religious and domestic duties; general health

* He was taken home prematurely by his friends; the consequence was a relapse in less than a week, when he was returned to the Asylum, and remained here several months. For the most of the time he was apparently comfortable, till in March, 1836, he became highly excited, and refused food. On the second day he was compelled to eat, when he remarked, "you may force food into the stomach, but you cannot force it to remain there," and immediately ejected it. Thus he acted for ten days, when he calmly and suddenly died.

good; recently more or less subject to rheumatism. Her mother and maternal aunt have been deranged. In April last, after an easy labour, she gave birth to a child, and at the usual time got about. Just then the eldest daughter was taken ill, and continued dangerously so for several weeks, during all of which Mrs. S. watched over the sick couch with a mother's fondest care. Her strength was unequal to the task. The fears and anxiety she experienced, together with loss of sleep and appetite, reduced her already enfeebled health. The child improved, but the mother was ever by its side, till about ten or twelve days before her admission here, when she was confined to bed by an attack of inflammatory rheumatism, for which she was bled three times, and thereby entirely relieved. At the end of the third day the disease returned, and she was again bled; the pain now ceased, but the mind on one or two occasions seemed bewildered, which, however, at first did not attract much attention among her friends. On the day following she evinced evident signs of insanity, by talking wildly and in wringing the hands. From this period she slept none, up to the date of her entrance into the asylum.

June 8th. Physical condition.—Stature small, body delicate; muscles small, relaxed; emaciated; complexion fair; hair light brown; eyes black; motion quick; anterior developement of head large, superior above the average height. Immediately after being placed in a room yesterday she stripped herself naked, and in a few moments shattered the glass, bowls and chairs to pieces, and hurled them with malignant fury at those who attempted to approach her. The face was flushed; eyes wild; pulse 130, soft, small, weak; tongue dryish. Ice was kept to the shorn scalp, and fomentations of hops and cicuta leaves to the abdomen. At present, 10 A. M., scalp pale, loose, heat augmented; cheeks flushed; pulsations of temporal arteries quick, weak, of carotids strong, 136; pupils dilated; eyeballs roll in their sockets, sunken; countenance ferocious; general restlessness of the muscles; tongue pale, moist, clean; breath bad, respiration easy; lips pale; appetite moderate; tenderness of the upper part of the spine on pressure; heart's motion quick, weak, regular, 134; no abdominal tenderness; skin of body cool.

Mental phenomena.—She manifests great maternal uneasiness; often starts, and shrieks at the imaginary cries of her children; thinks they are in some part of the house undergoing cruel operations, implores protection for them, and wrings her hands in despair; vociferates for a few moments, then is comparatively tranquil, when she correctly answers some questions, others she seems not to understand; memory confused, ideas wander. *Evening*—She has had since morning two

paroxysms of raving, during which she screamed, beat her breast, and inflicted several wounds on the body by striking it against the walls of her chamber; they lasted about an hour. Give sulph. morph. ¼ gr.

9th. Slept none last night, often rushed out of bed and attacked with preternatural strength her attendants; was several times in the course of the night seized with tremors of the whole body. At present, heat of scalp increased; face flushed; pulse very weak, small, quick; pupils dilated; tongue moist; anorexia; bowels moved by an enema; stool natural. Raves incessantly; scalp covered with ice; patient kept in a chair by straps. Give cold mucilaginous drinks.

10th. Wakeful all night, frequently excited, and though carefully watched, she found opportunities to bruise herself very severely against the bedstead. 5½, A. M. She has screamed constantly for the last two hours; heat of scalp much increased; countenance daring, wild; pupils dilated; general sensibility greatly diminished; pulse 134; heart's motion strong; tongue dry, red; thirst great; indifferent about food; deglutition easy; respiration hurried; raves and vociferates without forming articulate sounds. Cupped ℥vi.; ice kept to scalp. *Evening* —After the loss of blood in the morning the pulse was not over 90, but in six hours fever came on; face flushed; head hot; tongue dry; skin hot; thirst great; mental powers oppressed. At present, face pale; tongue covered with whitish-yellow fur; skin hot; eyeballs sunken; forehead oily; pupils dilated; pulsations of temporal and radial arteries 112, small, weak; hands cold; bowels regular; consciousness dull; seldom speaks; drowsy. Sponge body with brandy and cool water; ice kept to head.

11th. Raved from 3, A. M., till after daylight. 8, P. M., fever commenced again about noon, and continues; heat of scalp now great; skin of body hot, dry; eyes suffused; conjunctiva injected; pupils dilated, sensible to strong light; pulsations of temporal arteries 112, turgid, strong; rigidity of the arms; countenance stupid; pulsations of carotids strong; cheeks flushed; heart's motion full, strong; some irritability of stomach; thirst intense; feet cold; lower extremities in constant motion; tongue dry; face shining. Disposed to leave the bed; now and then ejaculates broken sentences; then is silent for some time; insensible to surrounding impressions. Cupped ℥xi. from scalp; sponge upper part of the body with cold water; cold cloths kept to the head; takes ℥ss. effer. mixt. hourly.

12th. Slept an hour or so last night; often started and shrieked out as if in pain; fever remitted from 7 o'clock this morning till about noon. 8, P. M., countenance stupid; pulsations of temporal and radial arteries about 134; disposed to sleep; cheeks full; respiration

easy; heart's motion weak; lips pale; feet cool; skin of body hot; thirsty; arms rigid and tremulous; body at times partly convulsed; sensibility low; fingers clinched; strabismus; left hand cool, right hot; mental powers much oppressed; seldom speaks; heedless to questions; give infus. digitalis ℥ss. with sulph. morph. $\frac{1}{16}$ gr. every hour. Cupped ℥iv.; fomentations over abdomen.

13*th.* Slept two hours last night; took ℥ii. infus. dig. and $\frac{1}{4}$ gr. of morphia. 11, A. M., fever came on early this morning, not so high as it has been. Heat of scalp lessened; pupils much contracted; sensibility still impaired; muscles of the arms rigid; pulse 112, soft; strabismus; countenance dull; bowels moved yesterday; thirst great; teeth dry; tenacious mucus between the lips; will not show the tongue; intelligence very dull. Cupped ℥iv. from occiput; body sponged with cold water, &c.

Evening. She has taken through the day ℥ii. of the infusion of digitalis; the morphia was suspended; fever continues; ordered the patient to be wrapped in blankets, steeped in hot water, for five minutes.

14*th,* 6 P. M. The scalp has been too hot all day, but there has been little or no fever; countenance more lively; has slept several hours soundly in the course of the day; thirst is much diminished; lips moist; tongue reddish, moist; pupils contracted; sensibility returned; complains of soreness of the muscles; pulse 84; bowels moved by enemata. Expresses much surprise from the fact of being surrounded with strangers. Consciousness is more perfect than it has been since her illness. Stop all medicines.

17*th.* For three days has had some fever in the afternoons; during the mornings the pulse was about 90; mind becoming more and more correct.

22*nd.* She is daily acquiring strength; now in the day room; pulse 82; appetite bad; bowels confined; sleeps soundly at nights; heat of scalp natural; face pale; three days since she took some animal soup, which caused fever and confusion of mind; both were relieved by taking ℥iv. of blood from the scalp. Diet, vegetable.

29*th.* She walks and rides out daily; anxious to return home; she is now considered convalescent.

July 1*st.* Discharged, well.

Remarks.—The general characteristics of mania in this case were lost by the supervention of meningitis, marked by slight convulsions or tremors of the body; by a disposition to sleep and to remain in bed; frequency of pulse; hot skin; great thirst; intense heat of scalp; contraction of the pupils; partial coma; and oppression of the mental

powers. Before their occurrence we were deterred from abstracting blood, in consideration of her enfeebled health previous to, and at the period of, her admission; but their presence showed a necessity for the daily abstractions of blood she underwent without regard to the strength of the pulse; and had this course of treatment been practiced earlier, it is likely the complication might have been prevented.

Frankford Asylum, June, 1837.

ART. VII. *Observations respecting Smyrna and its environs.* By G. R. B. HORNER, Surgeon U. S. frigate United States.

Smyrna, the grand emporium of Turkey in Asia, contains about 150,000 souls, and is situated in lat. 38° 26′ N., and in long. 27° 7′ E., from Greenwich. It is built at the head of a beautiful gulf, bearing the same name, partly on the side of a very lofty hill meriting the epithet of a mountain, and partly on a plain extending for five or six miles in an easterly direction to the foot of a high ridge of mountains bounding the gulf on the north and the east. Through this plain flows the Meletis, a rapid and crystal stream, which tradition states to have been the favourite resort of the illustrious Homer, to whom Smyrna boasts she gave birth. The plain having a rich alluvial soil, being in a high state of cultivation, producing a vast quantity of vegetable matter, and being constantly in a state of great humidity, either from rain, snow, the Meletis, or from irrigation, may be justly termed unhealthy, as it must be an abundant source of malaria.

Between the mountains, overhanging the gulf on the north and its waters, is an extensive plain, which is in part finely cultivated, and in part overflown and converted into pans for the manufacture of the muriate of soda, immense pyramids of which at all seasons may serve for landmarks to vessels navigating the gulf.

The face of the country on the west and south sides of the gulf correspond with that on the east and north, being marked by lofty mountains, overlooking alluvial and fertile plains. At the base of one of the mountains, on the south side, is a hot spring, of great celebrity; and some miles to the west of this one, near the town of Dourlack, is a sulphur spring, the waters of which are much esteemed by the inhabitants of the vicinity and those of Smyrna. The want of accommodations, however, prevent persons from resorting much to these springs.

The gulf being so completely pent up by mountains, the evaporation from it is very great, both during summer and winter. The water evaporated in the day is either precipitated at night, or condenses into clouds, which obscure the mountains, cover them with snow, or drench them and the plains with copious showers.

During the summer the embat, or sea breeze, blows with great regularity, from ten o'clock in the morning until six o'clock in the afternoon; and with such force, that the landing even in the city is rendered by the agitation of the water difficult and somewhat dangerous. In the winter the embat seldom occurs, and when it does, is extremely light; but in place of it the wind blows from various quarters, frequently from the north-east, and then is accompanied by heavy falls of rain, hail and snow, and the formation of ice. This wind is keen, damp, piercing, and quite as unpleasant as it is in the United States. Its coldness and other bad qualities may be ascribed principally to its passing over the mountains bounding the gulf on the north and east, but more especially to its sweeping across the still higher chain of Olympus, which runs along the south border of the sea of Marmora, and which I have seen covered with snow in August.

The climate of Smyrna, in the summer and fall, is hot and dry; in the winter and spring, damp and cold; but during the latter seasons there are great vicissitudes of weather, as, for instance, in the last month, January, the thermometer varied from thirty-two to sixty-six degrees. The air was of the former temperature while the wind was from the north-east, and of the latter temperature when it was blowing from the south-east. Last winter the thermometer was twelve degrees below the freezing point. I was informed by one of the citizens that the snow has fallen eighteen inches in depth, and remained for three weeks on the ground. The general failure of the crops of oranges, grapes and figs, last year, not only in quantity but quality, was owing to the severity of the winter.

Hospitals.—They are eight in number, viz. the Dutch, Austrian, French, English, Greek, Armenian, Turkish, and the Catholic and Protestant Hospital.

The Dutch Hospital was founded in 1786, and repaired in 1834. It is a neat stone building, plastered over; is one story high, forms an oblong square, has a well paved court, into which all the doors and windows open, and is large enough to accommodate forty or fifty patients. In front of it is a large yard, filled with bay and orange trees; and at the back of it is a handsome cemetery, for the interment not only of those who die in the house, but for that of any Dutch citizen. In the hospital is a dispensary for the benefit of its patients,

and that of all the poor, whether Christians or Mahometans, who may apply for medical aid. Both the hospital and dispensary are under the patronage of the Dutch consul, Mr. Vanlennop, a most worthy and benevolent man, and are attended by Dr. Morpogo, a native of Trieste, who is distinguished as an oculist, and receives for his services a salary of 150,000 piastres a year, which amount to about 700 dollars.

The Austrian Hospital was founded in the year 1788. It is in the heart of the city, and near the Dutch, English, and Greek Hospitals. It is three stories high, has a court, verandas to each story, a terrace on one side, and is capable of accommodating a hundred patients. It is kept in good order, is neat, and has the appearance of having been recently erected. It is supported by the Austrian government, and intended for the reception of all Austrian subjects. The attending physician is Dr. Amber, who was formerly in the navy.

The French Hospital is situated at the eastern end of the city, near the harbour, and consists of two buildings, standing in separate lots or yards, each of which occupies about a half acre of ground. One of these houses is for officers; the other for seamen, &c. The former is new, two stories high; is built of wood, brick and plaster, and about fifty feet square. Adjoining its yard is a handsome garden of nearly the same extent. The latter building was an old Turkish residence, and was purchased nine years ago. It consists of a large three story house, with two wings extending back, and is built entirely of wood. It contains a kitchen, an apothecary's shop, a bath room, chapel, and several wards of good size. The two buildings might perhaps accommodate a hundred sick, but now have only sixteen—three officers and thirteen sailors. Each patient is charged a franc daily for his support, provided he is able to pay; but any poor French subject is supported gratis. The institution is under the direction of the French consul, and attended by Dr. Pecor, of the navy.

The English Hospital stands on the opposite side of the street to the Dutch. It is made of stone, is two stories high, has four rooms below and four above, and a yard in front and at the back. In the back yard are some small out-houses, and several handsome tombs of British subjects. This Hospital was founded in 1785, is supported by the English government, and is intended for sailors in the navy, and also for those in the merchant service. It was for a long time under the care of Dr. Clark, of the navy, who was an eminent physician of Smyrna; but he having lately returned to England, it is now attended temporarily by Dr. Icard, a Frenchman by descent, who has a high reputation, and is one of the most distinguished of his profession

in the city. Dr. Evans, surgeon of H. B. M. ship Tribune, now there, it is said, will be appointed in the place of Dr. Clark, and will receive, besides his half pay, the usual salary of £300 sterling per annum.

The Greek Hospital was erected in the year 1779 by the Greek population, is maintained by them, and is for their exclusive benefit. It is an extensive building, being about one hundred feet wide and two hundred in length; is two stories high, and has a court paved with stone flags. In the first story are the cells for maniacs, the dispensary, kitchen, wash rooms, and some apartments for the paupers. In the second story are the medical and surgical wards, which are kept in neat order, and arranged after the European manner. The bedsteads consist of two wooden stands, with two boards laid across them. The beds are formed of sheets, blankets, coverlets, and mattrasses, well stuffed with wool, and are surrounded by calico curtains, hanging from frames suspended by cords from the ceiling. Each bed having a distinct set of curtains, any patient can seclude himself from the view of his neighbours, and shut out the glare of candle and daylight—all which things are desirable to a sick person, and not to be obtained in our Hospitals. Were this plan adopted in them, it would be certainly thought an improvement by the sick. The chief articles of diet are rice, bread, and stewed meats. All poor, superannuated and disabled Greek citizens, find an asylum in this institution. Its inmates are three hundred and fifty in number, of whom fifty are insane. The attending physician is Dr. Marsganar, one of the most noted Greek practitioners. At the back of the Hospital are a cemetery, a free school for Greek girls, and a pest-house, in which are put the patients affected with plague. High walls separate the pest-house from the other buildings. It is a large stone house, of a gloomy aspect, having few doors or windows, and neither painted nor plastered. It is appropriated to the use of the Greeks alone.

Of the Armenian Hospital I will say but little, for it is hardly worthy of notice. It stands in a close, confined part of the Armenian quarter, and is composed of four frame houses, set around a small lot, the best and next to the largest of which is used as a chapel. This is a similar institution to the Greek Hospital, being designed for the infirm and poor Armenians, but is much inferior in every respect; being illy arranged, wanting cleanliness, and having small, badly furnished apartments. The beds are miserable pallets, spread on the floor. It contains some old men and women, a few maniacs, and twenty patients. The most remarkable of its inmates is a man who has lost his nose, and wears in place of it a piece of perforated tin,

resembling a nutmeg grater. Dr. Ricopoli, a native of Scio, and who was educated in Italy, is the physician.

The Turkish Hospital is situated a mile to the west of the city, on the south side of the harbour, and in a beautiful level valley formed by two hills. The Hospital consists of two buildings, with a large court between them, and connected by very lofty walls. In the front wall is a large gateway, with an inscription in Arabic characters above it, and covered by a pretty portico, supported on four pillars. One of the buildings is in an unfinished state; the other has been built and used for years. The latter is eighty feet in length, forty in width, is two stories high, has three rooms, with grated windows in the first story, and in the second one a spacious entry, with Venetian blinds. On the sides are two large and well ventilated apartments, which have their ceilings painted in broad red, white and blue stripes, and their floors higher at one end than at the other. At the south end of this building is a white marble fountain; and on its west side, two gardens, containing together a couple of acres. In the garden farthest from the Hospital, is a pest house, which is a small stone edifice, painted red, and partly dilapidated. It has not been used for several years, and is now better suited for the dead than the living. The Hospital is deserted, save by the keeper, an aged Turk and his family, who occupy the unfinished part. The sick of the army, who were formerly sent to it, are now kept in the new barracks, which are large enough for two thousand men, but are occupied by only eight hundred. Dr. Floquier, a Frenchman, is the physician to both the former and latter place, and is in the service of the governor, Hussan Bey. This Hospital is not a receptacle for the poor, blind and infirm of any class, not even of the Turks; for this nation leave the care of such persons to Providence, and view their sufferings with indifference, believing that they are the manifestations of divine will and the decrees of Fate.

On the left or western side of the Meletis, near the caravan bridge, and about a mile from the city, is the Catholic and Protestant Hospital, or the European lazaretto. It was founded in 1815, on a small scale; but at this time is composed of twenty houses, one story high, built around a court of an oblong shape, containing nearly an acre, and planted with rows of trees. These houses are made of frames, filled in with mortar and sun-burnt bricks, rendered stronger by having been worked up with straw. They have roofs of fluted brick tile, contain one or two rooms, do not communicate with each other, and have all their doors and windows opening into the court. I found some masons and carpenters busily engaged in finishing several houses

lately put up. To protect the walls from rain, and increase their neatness, a coat of plaster is spread over them exteriorly and interiorly. Water is supplied from the river and two wells in the court. This establishment was formed and is supported by the Frank population. It is designed for the reception and quarentining of all poor Catholics and Protestants who have been exposed to the plague. For the information of such persons and others, the following inscription has been put over the outside of the gate. "Hospice destine aux pauvres compromis de peste—Catholique et Protestant." On the same side of the Meletis, and a few rods lower down it, the Greeks are engaged in the construction of a similar institution to that last mentioned. They have a lot of about two acres of ground, enclosed by a high stone wall, and are hauling materials for the erection of buildings. For present use there are ten small huts of plank standing about the lot and against the wall; they were occupied by from twenty to thirty men, women and children, who had been brought there from Bournabat, an adjacent village, in which the plague was prevailing. They had lost some of their relatives by the disease, and were put in quarentine until suspicions of their having been infected should be removed. They were not strictly confined, but were allowed to come without the gate, sit in the road, and converse with passengers and persons on the opposite bank of the stream, which, there, is not more than twenty feet across.

Bagnios. There are several of them. The principal one is that close by the bazaars. The description of this one will answer for all the others. It is a spacious edifice, divided into two grand apartments, communicating by the doors of a room between them, and having vaulted ceilings, formed by two domes, composing the roof. In one of these apartments are ottomans, shelves loaded with towels and quilted coverlets, and a bar where the keeper sits to receive pay and deal out refreshments. The other apartment is for bathing. It has a white marble floor, raised to a platform in the centre; a small chamber in each corner; fountains of cold and hot water on its sides: and has its ceiling pierced by numerous square holes, admitting light and letting out the vapour. Beneath the floor are the furnace and boilers. Water is supplied by wooden pipes passing under the city. A person wishing to bathe enters the bagnio by a flight of granite steps, immediately on the street, and is forthwith surrounded by the telackes or bathers, who are naked, save having their loins covered by aprons. He chooses a telacke and ottoman. Assisted by the telacke he undresses, his clothes are deposited upon the ottoman, a towel is tied about his waist, and he is led into the bath. Oppressive heat and a sense

of suffocation seize him, from being plunged from the fresh air into an atmosphere charged with the dense steam arising from the heated water issuing from the fountains and running over the floors. Lying down on the platform, the elevated sides of the floor, or entering one of the chambers and closing the door by a curtain he soon breaks out into a profuse perspiration, and is relieved from the sense of heat and suffocation. The telacke then comes and with his right hand covered by the sourran, a black hair bag, rubs him from head to foot, rolls up the old cuticle in enormous cylinders, oftentimes as large as crow quills, and three inches long; next lathers him with soapsuds, cleans his head of scurf, then washes him by dashing basins of water taken from a fountain; and, if it is desired, performs the operation of ovolar, or twisting and cracking all the joints of the extremities. The bathing done, the telacke wipes him as dry as the steam will permit; puts a towel around his loins, gives him a pair of clog slippers, and conducts him to his ottoman. He there lies down, envelopes himself in a coverlet, and remains until cool and perfectly dry. Then dressing, he reclines or sits cross-legged on his couch, smokes a pipe, drinks a cup of coffee, calls to a servant and deposits his reckoning on a small waiter handed him. The price of the bath is according to the means of the person taking it, and varies from five to a hundred piastres; that is, from a quarter to five dollars; although, ordinarily, it does not exceed one dollar. Any amount exceeding the last sum may be considered a donation.

Apothecaries. There are several who keep shops well furnished with drugs and medicines of every kind, and at reasonable prices. Most of the medicines are brought from France. The best rhubarb comes from Russia; opium is scarce, and has almost ceased to be an article of export from Smyrna. For large quantities orders are sent to Constantinople; that now being the market for it, since the opium trade has been monopolized by the Sultan, whose agents pay the cultivators the price established by him, collect and send it to the store houses of the capital. This price being very reduced, the cultivators make little or no profit from the article, and raise less of it every year. Of course its value is gradually increasing. Its present price at Smyrna, I was informed, is from four and a half to five dollars a pound, and must continue to increase as long as the Sultan monopolizes its sale. The Turks seem to be leaving off the consumption of opium, and to be taking to that of wine and ardent spirits, great quantities of which are imported. I have met with only one of them who was an opium chewer. He was Hussan Bey's jester, who showed more nervousness than he displayed wit.

Physicians. Of these, besides those already mentioned, are Dr. Mizato, Dr. Raffinesque, an Italian, and many others, natives and foreigners. All the regular practitioners have been educated in France and Italy, there being no means of instruction in Smyrna, or any other part of the Ottoman empire.

Diseases. Having the above account concerning the situation of Smyrna, and of the fertile plains in its vicinity, it is hardly necessary I should state that among its most common diseases are miasmatic fevers, especially intermittents. The crew of this ship has fortunately, from being there in the summer time, escaped them; but that of the John Adams, the vessel in which I made my first cruise to the Mediterranean, suffered sorely from them, while she was engaged in convoying vessels from Smyrna during the summer of 1833. In the month of August of that year, she had so many cases aboard, that it was found necessary to take refuge in the harbour of Milo, and remain for three weeks. The plague has prevailed at Smyrna four times within the last seven years, but has not been by any means so destructive as has been stated. Before paying my last visit there I heard at Malta that two hundred persons were dying at the former place every day; and when we arrived I ascertained that there were a few straggling cases in the city and neighbourhood, and not more than two hundred of them had occurred from the beginning of the fall; the time when the disease last broke out. If it is prevalent the wealthy inhabitants shut themselves up in their houses, which have courts, and undergo a voluntary quarentine, holding no communication with one another, save what cannot be avoided, and receiving their provisions through water, which is thought a purifier. Cats at this period are forbidden access to their houses; people believing that these animals have communicated the plague from one person to another. The physicians appear to know as little of this disease from personal observation, as those of countries where it is unknown; for none of them will attend a case, because, if he should, he would not be allowed to attend patients affected with any other malady. The treatment of plague then, must necessarily be bad to an extreme, and is entirely empirical. Those sick of it are often carried into the fields, and placed beneath tents, even in the coldest weather, as happened last month. Having to suffer from improper treatment, cold, hunger, thirst, and contend with a violent disease, few of them live to see their homes. The treatment such, who can be surprised at the great mortality? Small-pox, consumption, catarrhs and other affections of the respiratory organs, may be, with great propriety, classed among the most common maladies of Smyrna. Small-pox is ever

there, vaccination being so little and imperfectly practiced. No intercourse can be held with this city by a man-of-war, particularly by one of large size, and having consequently a numerous crew, without great danger of getting this pest aboard. The Constitution got it there last winter, and the crew of this ship are now infected, three cases having occurred and more being reported. The first case terminated fatally, being of the confluent kind, and connected with catarrh. The frigate putting to sea the day after the occurrence of this case, I was unable to prevent farther infection by sending it ashore. The ship being still at sea all susceptible persons aboard will probably be infected.

We arrived at Smyrna with fifteen on the sick list, and left it with ninety; the largest list I have ever known in any vessel to which I belonged. Of this number eighty were affected with catarrh of the severest nature, having been attended with high fever, sometimes with delirium, and mostly with intense headache and rheumatic pains. A seaman who had been phthisical for some time, but able to attend to duty, died of consumption four weeks after his admission upon the list.

Notwithstanding Smyrna abounds in pulmonary complaints, and many of its inhabitants are annually carried off by phthisis pulmonalis, it is becoming a rendezvous for people having this disease. A good many have resorted there from the United States; and I was told of four or five who have lately died. I can hardly conceive a more striking instance of folly than for a patient thus to leave his friends, give up the comforts of home, traverse five thousand miles of sea and ocean, undergo the dangers and hardships of such a voyage, suffer the anxieties caused by absence from those most loved, and fix himself in a strange city, which has a worse climate than that of a great portion of his native country; which has no good hotels or other houses for travellers; has damp, muddy, filthy and narrow streets, whereupon the sun never shines; is constantly afflicted with plague, and abounds in the very disease with which he is afflicted.

Port Mahon, Feb. 1837.

ART. VIII. *Dislocation and fracture of the Astragalus; unsuccesful efforts at reduction; extirpation; amputation; death. With Remarks.* By GEORGE W. NORRIS, M. D., Surgeon to the Pennsylvania Hospital.

William Summerill, ostler, æt. 30, was admitted into the Pennsylvania Hospital, Sept. 26, 1831, and came under my immediate care under the direction of Dr. J. R. Barton.

An hour previous to admission, while descending a ladder, he slipped and fell in such a manner as to throw the entire weight of his body upon the outer part of his left foot. Upon examination the foot was found to be turned inwards, and nearly immoveable. A slight depression existed immediately below the lower end of the tibia, and there was a considerable hard and rounded projection on the outer part of the foot, a little below and in front of the extremity of the fibula. The skin covering this projection was reddened, but not excoriated. There was no fracture of either bone of the leg.

These appearances rendered it evident that the injury was a dislocation outwards and forwards of the astragalus; and a short time after admission efforts were made by Dr. Barton to reduce it. This was done, after relaxing in as great a degree as possible the muscles of the leg, by fixing the knee and having assistants to keep up extension by seizing the heel and front part of the foot at the same time that the bone was pushed inwards and towards the joint by the surgeon; these efforts were continued for a considerable time, but had no effect in changing the position of the bone.

Six hours afterwards Drs. Hewson and Harris saw the patient, in consultation, when attempts were again made at reduction, which not proving more effectual than on the first trial, the excision of the displaced bone was determined on.

The patient being properly placed, an incision was made through the integuments, parallel with the tendons, commencing a short distance above the projection on the foot, and extending down far enough to expose fairly the astragalus and its torn ligament; the bone was then seized with forceps and easily removed after the division of a few ligamentous fibres that continued to connect it to the adjoining parts. Very little hæmorrhage occurred; two small vessels only requiring ligature.

After removal it was discovered that about one half of the surface which plays in the lower end of the tibia, had been fractured, and remained firmly attached to the extremity of that bone, and as it was

judged that the efforts necessary to remove this would be likely to produce more injury to the joint than could arise from allowing it to remain no attempt was made to extract it.

The joint being carefully sponged out, the sides of the incision were brought accurately together by means of a suture and adhesive strips, after which, simple dressings and a roller were applied, and the foot, restored to its natural position, was placed in a fracture-box.

Sept. 27th. Had a restless night, having suffered from pain in the joint. Pulse good; skin moist; no thirst; has now but little pain; has taken opium freely since the operation, which is to be continued. Low diet.

28th. Passed a good night; is without fever; no pain in the foot, which lies comfortably in the fracture-box: dressings are moistened by oozing from the wound, but have not been disturbed; bowels confined. Common enema; opium continued; soup.

29th. Does not complain of limb; rested well; general symptoms good; dressings removed; no union; wound suppurating freely. Opium continued; soft poultice to the part.

October 1st. Yesterday (30th) a portion of the skin on the outer part of the foot was red, and tender to the touch, and to-day a small slough, about an inch in diameter, occupies that part: wound, nevertheless, looks well, though the suppuration is more free. Same treatment continued.

5th. Since last report the discharge has been gradually augmenting, and is now profuse. Slough did not increase in size, and was not deep; bowels regular; pulse more frequent and feeble; tongue clean; night sweats. Good diet, with porter; opium and poultice continued.

8th. Both ligatures came away; suppuration continues free; a collection of pus has formed near the internal malleolus, for the free discharge of which a counter-opening was made; heavy sweats at night; no diarrhœa; appetite failing. Sol. sulph. quinine; morphia at night.

By the 15th, the discharge of pus had greatly lessened, and his general symptoms had improved.

December 12th. To day that portion of the astragalus which had been suffered to remain attached to the tibia was found to be carious and loose, and was removed. Constant pressure on the heel has produced ulceration of it. The limb is much swollen; wound has made but little progress towards cicatrization; granulations are exuberant and of a light colour; secretion of pus still great; general symptoms good. A probe introduced through either opening into the joint,

shows the surfaces of the adjoining bones to be rough, softened, and evidently carious.

March, 1833. Since the last report, (a period of fifteen months,) various means have been resorted to for the removal of the carious portions of bone and cicatrization of the wound, but unsuccessfully. At this time the bones of the foot and ends of the tibia and fibula are all diseased. The patient's general health has suffered severely from the long continued irritation. He has well marked hectic fever, accompanied by heavy night sweats; he has also frequent attacks of erysipelas in the limb, and diarrhœa. Amputation of the leg was now looked upon as the only means of saving his life, and was accordingly done on the 27th by Dr. Barton.

The circular operation was performed, and union by the first intention attempted. The stump never took on a good appearance, showing no disposition to unite, and discharging a thin fœtid matter. His diarrhœa returned a few days after the performance of the amputation; his strength failed, and he died on the 5th of April.

Examination of the amputated limb showed that no attempt at regeneration had been made in the joint; the bones of the tarsus and ends of the tibia and fibula were in a great measure deprived of their cartilages, and so much softened, as to be readily cut into with a scalpel. The tarsal ends of the metatarsal bones were also softened, and the tibia was spongy in its whole extent, and remarkably light.

The records of our science possess but few cases of luxation of the astragalus, not complicated with laceration of the integuments; and an examination of those reported show that surgeons are at variance in regard to the best mode of treatment of them. All agree that efforts should at first be made to restore the displaced bone; but this failing, as in the majority of instances it does, where the luxation is complete, what course is to be pursued? Is the bone to be suffered to remain in its new situation, or is it to be removed? If permitted to remain, violent inflammation of the integuments and joint is almost certain to follow, in which event there is great danger, from the state of tension the parts are placed in, of gangrene occurring and necessitating the amputation of the limb if not endangering the life of the patient; and even should the dangers of inflammation and gangrene be escaped, and a natural cure take place, great deformity and lameness must necessarily ensue, and the patient will remain more or less liable to ulceration of the skin over the projection on the outer part of the foot. For these reasons we deem the practice pursued in Summerill's case of excising the astragalus, far preferable to leaving the cure to nature; and the limb cured by the removal of the bone,

though shortened and anchylosed, will be found both more useful and sightly than the club-foot deformity left after a natural cure.

Desault* reports two cases of this accident; one he reduced without difficulty, and the other he succeeded in replacing after enlarging the wound of the capsule. Boyer† details one case where the bone was left undisturbed; on the 18th day inflammation came on, and terminated in gangrene, when the limb was amputated with success. Mr. Gooch‡ relates a case of an irreducible laxation of this bone, in which he deemed it proper to amputate the limb. Sir A. Cooper§ gives two cases, both irreducible. The first was attended with fracture of the tibia at the internal malleolus, and was left to nature; "the integuments sloughed, and the wound was a long time in healing." The second case was attended with a fracture of the fibula a little above the joint, and was also left to nature; the skin sloughed on the 22nd day and exposed the astragalus. After four weeks the bone became loose and was removed, and at the end of five months the patient recovered.

In September, 1833, I saw a case treated by M. Dupuytren at the Hôtel Dieu of Paris. Two fruitless efforts were made at reduction, but he succeeded in bringing the foot nearly into its natural position. Six weeks afterwards the patient could use his limb. A small slough formed over the tumour sometime after the accident, but separated without opening the joint. This case has been published in the 13th volume of the *Journal Hebdomadaire*, where mention is made of two other cases treated by the same surgeon. In one of these the bone was easily reduced; and, failing in the other, he proposed its extirpation. This was rejected by the patient, who ever after moved about with "pain and difficulty," the foot being greatly turned inwards. In the *Archives Générales*, for December, 1833, a fourth case of the same surgeon is alluded to that was left to nature; gangrene followed, and the man was cured by amputation of the leg. In the same journal a case of Professor Nanula of Naples is given, where the practice pursued by Desault of enlarging the wound in the capsule was followed, and the patient recovered with a good limb.

Dr. J. R. Barton informed me that he had seen two examples of simple dislocation of the astragalus at the Pennsylvania Hospital. One of these was in 1816, and being irreducible, was not interfered with. Inflammation came on after a short time, when the integuments sloughed and part of the astragalus was exposed; this, however, was

* Œuvres Chirurgicales, tom. i.
† Malad. Chirurgic., tom. iv.
‡ Surgical Works of B. Gooch.
§ On Dislocations.

soon covered by healthy granulations, and cicatrized. At the end of five months the patient walked and had good use of the joint, though great deformity of the foot existed, and he continued to be subject to ulceration of the newly formed skin on its outer part. In the other case, the care of which was also left to nature, gangrene took place soon after the accident and the man died.

Compound, though more frequent than simple, dislocations of the astragalus, are nevertheless sufficiently rare to make their notice a matter of some interest. Formerly they were thought to require immediate amputation, but a sufficient number of observations are now collected conclusively to prove that the limb may be saved, though it has generally been thought necessary to remove the bone. Indeed, in the majority of these cases, this is so much detached from the adjacent parts as to be unable to support its vitality, and will, if returned, produce all the bad effects of a foreign body introduced into a joint.

In asserting that compound are more frequent than simple luxations of the astragalus, I am well aware that it is contrary to the opinion expressed by our highest authority, Sir Astley Cooper. At page 527 of his great work, he says, "A simple dislocation of the astragalus sometimes, though rarely, occurs; a compound luxation is much more rare." The grounds for this opinion, which is likewise that of most surgeons, are not stated; but that it was not the result of his own experience, is shown by his reporting five cases of the accident attended with more or less laceration of the integuments, while he gives but two of its simple displacement. A comparatively large number of examples of the compound dislocation of this bone may be found scattered through surgical writings. Hildanus,* the first author who speaks with precision of these luxations, gives an instance in which it occurred and the patient recovered after the extirpation of the bone. Boyer† cites five cases, all terminating successfully. Desault‡ and Hey§ each report three examples of the accident, in all but one of which a cure had taken place. Sir A. Cooper, as just stated, mentions five cases occurring either in his own practice or that of his friends: in one of these the limb was amputated, and in another the bone was reduced, and all terminated successfully. M. Fallot‖ has given a case attended with fracture of the surfaces articulating with the scaphoid and calcaneum, in which excision was performed with success. MM. Arnal and Velpeau¶ have recorded each a case terminating fatally; one fifty-two and the other four days after its removal.

* Opera. Cent. ii., obs. 67.
† Maladies Chirurg., tom. iv.
‡ Œuvres Chirurgicales, tom. 1.
§ Practical Observations.
‖ Journal des Progrès, tom. 1.
¶ Jour. Hebdomadaire, toms. i. and xii.

In our own country several examples of the accident have been observed. The late Professor Wistar removed the astragalus in a case of compound dislocation, and the patient was cured with some motion at the joint. Drs. Stevens* and Gillespie† have recorded instances where the same practice was adopted with happy results; and in the No. of this Journal for May, 1827, Dr. Beatty has given an interesting case in which a cure followed, though the bone was preserved.

I recollect to have seen at the Pennsylvania Hospital a case where the astragalus was thrown completely out from the limb; the following brief statement of which is taken from the note-book of my deceased friend, Dr. Hammersly, at that time one of the resident physicians.

The patient, Isaac Lyon, æt. 22, was admitted on the afternoon of July 20th, 1829. He was of intemperate habits, and had received his injury a short time previous to being brought to the Hospital, by the falling of a pile of boards upon his leg. The ankle joint was laid open obliquely on its outer side for about four inches, and the external malleolus exposed. A bone that had been picked out of the soft earth upon which he had been lying, was handed to the doctor by a person who accompanied him, and proved to be the astragalus, with one of its edges broken off. There was no hæmorrhage from vessels of any size, there being only a general oozing from the part, and no other injury was received. The attending surgeon, Dr. Barton, saw the case soon after admission, and directed the sides of the wound to be brought loosely together with adhesive strips, and the limb to be placed in a proper position in a fracture-box, with just pressure enough on its sides to steady it. The patient did not complain of much pain, but was kept under the influence of anodynes.

On the third day enormous swelling of the limb, and a crackling sensation upon pressure over the tibia, existed; the whole leg and inside of the thigh were of a copper colour, and some bloody vesicles had appeared around the ankle and upon the inside of the leg; countenance shrunken; pulse 140, and wound discharging a thin ill-conditioned pus. The treatment consisted in the free use of opium, stimuli, and nourishing soups; poultice to wound and lead-water to the limb.

On the morning of the fifth day he was unable to open his mouth freely, and his head was at times thrown back forcibly upon his pillow. These tetanic symptoms increased in violence, and towards night became general; and he lingered on in the greatest agony till the evening of the 27th.

* N. Y. Med. & Phys. Journal, No. 20. † Amer. Journal, Aug., 1833.

ART. IX. *A case of Enlargement of the Thymus Gland, attended with unusual symptoms, and terminating fatally.* By WILLIAM C. ROBERTS, M. D., of New York.

A stout coloured child, eight months old, had laboured for three or four days under a slight bronchitis, for which no medical aid had been requested. On the day of his death he was so much better as to be left under the care of his sister, by his mother, when she went to her work. Previous to going she lighted a small portable furnace, filled with hard coal, by means of some charcoal, and placed it under the grate in the room. At 10, A. M., the child was seen by its father, apparently well. About 2, P. M., it was heard by some neighbours to groan heavily. When they visited it, it was found pale, cold, faint, livid under the eyes, with froth upon its lips, in the sister's arms. The door and windows of the room were closed. The smell of the coal gas was very offensive, even after the room had been for some time ventilated. The child was rubbed with vinegar, and revived, and I was sent for. The reaction must have been rapid, for when I arrived, in a few moments, the following was its condition. It was lying with the head thrown back in a friend's arms. The skin was hot and dry; the pulse excessively frequent, the respirations 70 per minute; the alæ nasi in rapid play. A subcrepitous rattle was heard all over the chest with every respiration; and with every expiration a short groan was emitted. There was no cough; respiration was visibly effected, both with the ribs and diaphragm. The look was anxious; now and then the child's eyes were turned upwards, and it was thought by the by-standers to be convulsed; of this no other evidence existed. The brain, feeling like a soft tumour, was elevated to a very considerable height at the anterior fontanelle with each respiration; and it pulsated strongly, imparting to the ear, through the hand, the idea of a harsh thrilling. The pulsation of the heart was to be felt on both sides of the chest, and in the belly; the beating of the aorta was so strong as to convey the idea of its being in an aneurismatic condition. The child often rubbed the back of its head on the pillow, and frequently made an attempt to sit up, but directly fell back again. Being fully convinced, from coupling the existing symptoms with the previous history of the case, that it was one of pneumonitis infantum, of great intensity, which I had to treat, I immediately bled it, placed it in a warm bath, and administered the vin. antim. with a view to produce vomiting and relaxation: the former attempt failed; the latter succeeded in inducing free diaphoresis. Sinapisms were then ap-

plied to the calves of the legs, and to the back of the chest; and after an untoward delay of nearly three hours, six leeches were applied on its anterior surface. They filled well, but the bites bled very little after they had fallen: calomel and pulv. antim. were now given, but very shortly after, the feet of the child began to grow cold, and it expired rather suddenly, with a slight spasm, at half past eight o'clock, and within seven hours from the first observation of its complaints.

I have since learned that although this infant had never any thing like a paroxysm of dyspnœa, there were times during its life, when he showed symptoms of difficulty of breathing, opening his mouth and seeming to gasp for air. In the language of his parents, he was "phthisicky," and exceedingly liable to colds on slight exposure. It had cut no teeth, nor were any at hand.

Autopsy at 2, P. M., on the following day, assisted by my friend Dr. George W. Hodgson. Sound of the chest dull. On removing the sternum and cartilage, we were instantly struck with the uncommon size of the thymus gland, which extended from above the sternum to below its lower end, and laterally, far into either side of the chest. It was dissected off from at least one half of the pericardium, which it overlapped, and from a corresponding extent upon the right lung. It was of a purplish colour, consisted of two large lateral (*b*, *b*,) and two short cervical lobes (*a*, *a*,) and contained a milky fluid. In its greatest width and length, it increased three inches: nearly half an inch in its greatest thickness. Just after removal from the body, it weighed eight drachms and four grains. (See fig. p. 387.)

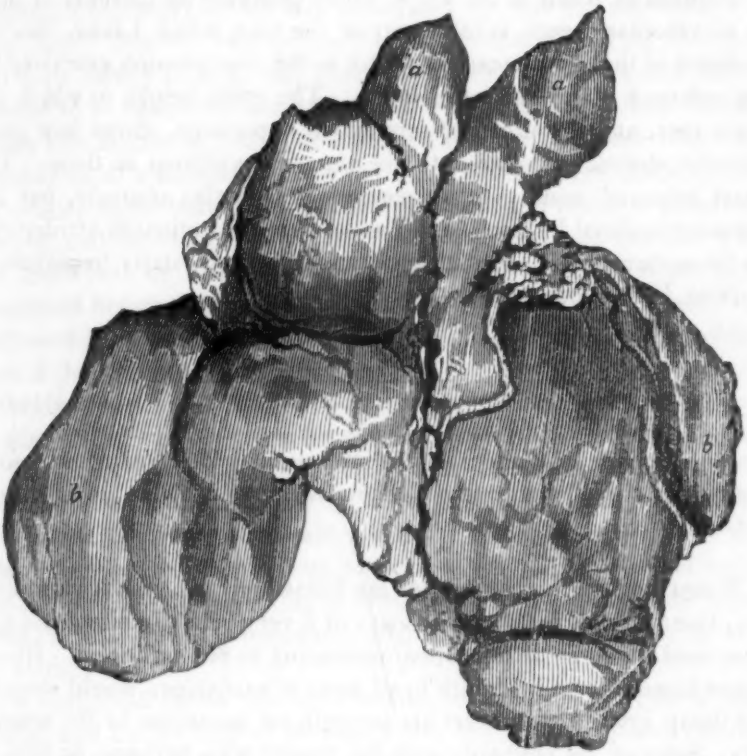
The lungs are perfectly healthy, admitting of complete inflation, being universally crepitating, not even congested, as is usual after death, and floating in water, with the heart attached. The bronchi contained a very little reddish froth, and presented some patches of arborescent redness, indicative of very trifling irritation. The right side of the heart contained coagula of very black blood. The cause of death appearing to have received a satisfactory explanation, the abdomen was not opened. The brain was, however, examined, and found free from disease in all respects; it contained no serum; the superficial veins were filled with black blood.

The papers of Dr. Montgomery of Dublin, and of Drs. Hirsch and Kopp in Germany, so fully analyzed in this Journal for February, 1837, have directed the attention of the profession to the fatal suffocation which is caused by enlargement of the thymus gland in children. But the cases they have described differ altogether from that which I have now related. The "thymic asthma" they portray is a chronic affection, evidently spasmodic, and consisting of periodical

paroxysms of dyspnœa. The disease under which the subject of my narrative laboured, was attended with great vascular excitement, heat of skin, frequency of pulse, pulsation in the chest, belly and head, &c. In this respect, and in the present state of my knowledge on the subject, I think it peculiar, and I venture to hope it will not be thought uninteresting. If I am correct in supposing that it simulated pneumonia, it will establish a new diagnostic indication; and the condition of the thymus will merit a careful examination in future autopsies. The pressure exerted by the gland in this case, was chiefly within the chest, and by the lateral lobes upon the lungs and the heart. The cervical ones were short, and probably exerted little compression upon the nerves of respiration. Neither was the trachea much pressed on, and hence, probably, the reason why the symptoms resembled more those of pulmonary congestion, in which disease vascular excitement always runs high, than those of suffocative asthma, such as has been hitherto described. The perfectly healthy condition of the lungs and brain which was met with, is not without a parallel. In one of Dr. Hirsch's cases, indeed, the lungs were gorged with dark red blood, as in asphyxia; but in that of the child of Dr. Eck of Berlin, mentioned by Haugstedt, who died of thymic asthma, the heart and lungs and air passages were healthy, and no effusion existed in the brain. In a like case cited by the reviewer of Haugstedt's work, (Thymi in homine, Copenhagen, 1832,) in the Med. Chir. Rev. for July, 1834, the gland in a child aged eighteen months weighed three ounces, and was four inches long; yet "the abdominal and thoracic viscera were found to present a most healthy appearance, and no trace of any cerebral disease could be detected." It is worthy of remark that the patient suffered very little from dyspnœa during life; but in Haugstedt's treatise we find it stated that in a case in which the thymus had attained the enormous weight of five ounces, and caused a fatal hydrocephalus, no dyspnœa had been induced. So also in a case by Rust, (Mag. 1826,) ending in a sudden suffocation, (the gland being only one and a half inches broad;) excellent health had previously been enjoyed.

In few of the cases recorded has the thymus gland attained to greater size than in that which I witnessed. Dr. Montgomery met with one which, although he did not weigh it, he is sure "weighed at least two ounces." It was three and a quarter inches long, nearly three inches in breadth, and fully three quarters of an inch in thickness. Dr. Kommaul speaks of one which weighed fourteen drachms. Dr. Van Nelson of one which weighed nine drachms. Dr. Hirsch of one of nine and a half drachms weight. Dr. Hirsch thus remarks: "The

most prominent feature in the post-mortem examinations was the appearance of the thymus gland. In one case it might have been mistaken for the lungs, it was so thick and hypertrophied; it extended from the thyroid gland to the diaphragm, was *two inches wide, weighing more than an ounce.*" The gland which I possess, weighed, just after removal, *one ounce and four grains.* Its greatest length and breadth were three inches, and at the thickest part fully half an inch.



It consisted of two large lateral (*b*, *b*,) and two short cervical lobes (*a*, *a*,) was of a pale purple red colour, healthy in consistence, the cellular instructure containing a milky fluid. In the fifth plate in Sir A. Cooper's work on the Anatomy of the Thymus Gland, fig. 14, is the representation of a thymus "from a large child of *four months* old, the weight of the two glands being *forty-five grains, which is two hundred and forty at birth.*" That of which I speak, taken from a child of *eight* months, very far from having undergone a further and proportionate reduction, weighs, at that later period of existence, four hundred and eighty-four grains.

In order not to swell this paper to an undue length, I shall abstain

from any speculations as to the influence of the vapour of the coal in causing a sudden distension of the previously enlarged thymus in this case. I may, however, in conclusion, observe that the cause assigned by physiologists for the elevation of the brain during expiration, viz. the greater resistance which the blood experiences in its passage through the lungs while in the state of expiration, by which a stagnation is brought about in the right side of the heart, and consequently a retention of blood in the veins, which produces an increase of bulk in so vascular a part, is in favour of the view which I take, that the violence of the symptoms was owing to the compression exercised by the enlarged gland upon the lungs. The great height to which the brain rose, and the alternate subsequent depression, shows how great was the obstruction offered to the venous circulation in them. The heart laboured unduly to overcome not only this obstacle, but the pressure suffered by itself, and the death of the patient is attributable to the embarrassment of the functions of parts so vitally important.

New York, June, 1837.

ART. X. *Case of Cancer of the Stomach, with calcareous concretions in the left lung.* By GEORGE O. SUMNER, M. D., of Hartford, Connecticut.

Moses Perkins, the subject of the following case, was born at Groton, Connecticut, in 1786. He was of a very robust constitution and possessed a degree of resolution amounting to foolhardiness. He exposed himself from his youth to all sorts of hardships; would sleep on the damp ground, and exert his strength on occasions to the utmost, &c. Some of his foolhardy acts the reader will, perhaps, be slow to believe; but I record none but such as I have satisfied myself by particular and minute inquiries to be strictly true. He would eat *living earth-worms*—at one time he ate a gill or more of them at a meal: he would swallow, on wagers, rotten eggs, and eggs with chickens in them, &c.: and, however incredible it may seem, he at one time actually swallowed a *streaked snake alive!* this latter he disgorged by immediately drinking half a pint or a pint of *raw rum!* This act took place ten or fifteen years before his death.* Formerly Perkins fol-

* This is stated on the testimony of respectable eye-witnesses. The opinion of the by-standers seemed to be, however, that Perkins did not intend to swallow the snake: but they state that having caught the reptile, he held it up to his own

lowed the seas for several years. He was a great boxer, and when in his prime, it was frequently said of him "that he had rather fight than eat." In his rows he was often severely beaten and bruised. Some twelve or fourteen years before his death, his left hand was severely injured in blasting rocks: and in the summer of 1828, while engaged in the same employment at Bridgeport, in this state, the same hand was so severely injured by another blast, as to render amputation necessary; which was performed by Dr. Samuel Simons of that place. For the two or three years previous to 1828, his health had been slowly failing; and after the injury of his arm, his failure seemed to be somewhat accelerated. With other complaints, constituting this failure of health, he had been troubled for some time with a defluxion of a nauseous fluid from the posterior nares, and a relaxatio uvulæ: these latter complaints he called (and perhaps properly) *catarrh*, and for them he had taken various stimulating snuffs. I do not know that he ever had any syphiloid affection. I might have mentioned before that he had been for years a man of decidedly intemperate habits—in the sense of the term used before the golden days of the temperance reformation.

Perkins first applied to me for medical assistance on the 3d of August, 1829. At that time his skin was very yellow, and there was manifest biliary derangement. He was costive and quite feeble. I prescribed for him as follows: ℞. aloes; rad. rhei.; hydrarg. chlorid. mit. (calom.) āā gr. i.; sap. cast. gr. ii.; ft. pil. i.; one or two in the twenty-four hours, or sufficient to remove the costiveness and regulate his bowels. After taking a few of these pills he became much better; his countenance improved, and he said he had not felt so well for years.

He continued better for some weeks, but at length began to lose ground, and on the 19th of October I was sent for, and found that he had been attacked with hæmatemesis, with great pain in epigastrio, and vomiting a pretty large quantity of fresh blood; this last had occurred after turns of violent and long-continued coughing. The blood, though fresh, was entirely without froth; and, under all the circumstances, especially in the sequel of the case, I was constrained to think that the blood was discharged from the stomach, and not from the lungs. There was also a spasmodic affection of the abdomi-

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widely-distended mouth, and asked his comrades what they would give him if he would swallow it. The poor snake, wriggling to get away, slipped through Perkins's hands and down his throat in an instant. For once, they said, Perkins now seemed intimidated; but, immediately seizing the rum jug, he drank off a large quantity of the liquor, vomiting followed and the snake was ejected.

nal muscles, drawing the portion of muscle on which it operated up into the form of a *ball*, and shifting from one to another portion of muscle.

I gave him tr. opii and tr. ferr. muriat. combined, as anodyne and styptic, and applied an epispastic a little to the right of the epigastrium—afterwards spermaceti and arrow-root jelly as emollient and soothing remedies. I think he had no return of hæmatemesis, but he continued to be the subject of much pain and great debility, and for many days his recovery seemed problematical. For anodyne he took pulv. ipecac. et op. and spts. ether. nitric., with occasional doses of tr. opii. His bowels were costive, and had to be moved every day or two by mild cathartics, as ol. ricini, salts, or mild pills. At length he began slowly to convalesce, and on the 11th of November I discontinued my visits. For a few days previous to my leaving him, I had given him moderately of a mild bitter infusion. He emaciated very much during this sickness.

He was poorly through the succeeding winter, but by dint of good resolution, which never for a moment forsook him, kept about, and attended a grist mill, situated across a cove, and distant a quarter of a mile from his house: he often, however, had to be transported in a boat to and from his house and mill. He got rapidly worse the last of March, 1830, and after he had held out as long as possible, he sent for me.

I found him, March 28, with strength very much prostrated, great emaciation, total loss of appetite, almost total inability to keep food or medicine on the stomach, and costive. There was a small *tumour* situated in the region of the pyloric orifice of the stomach: this tumour was quite sore, and was occasionally the seat of severe pain, the sensation of which he compared to that from being cut with a knife. It struck me at once that here was cancer of the stomach. I applied an epipastic over the tumour, and gave ol. ricini as a cathartic—likewise a pill of ext. hyosciamus gr. ii., calom. gr. $\frac{1}{8}$, two or three of these pills in the twenty-four hours. After a day or two, sickness at stomach nearly subsided, and some little appetite for some kinds of food was experienced. The pain in his stomach also abated, (more indeed than could have been expected as the effect of the medication,) and never returned with any severity: soreness of the tumour continued. After taking six or eight of the hyosciamic pills, they affected his head and sight so much that their use had to be suspended. Laudanum had generally to be given at bed-time, and castor oil to be freely used as a cathartic. His skin, as last fall, was exceedingly yellow, and his strength all gone—could not sit up a moment.

April 21st. I found him very low, and in addition to the previous symptoms, there was a *tumour* at the angle of the jaw on the right side, which was very sore; and there was a watery swelling of the left foot which continued to extend till it reached the trunk. The tumour on the jaw spread down the neck and up the cheek, was very sore, and somewhat painful, and considerably impeded deglutition. Little was done for the unhappy man after this, except to give him an injection every day, and wine to yield him some support. Saturday, April 24, at about 1, A. M., he died.

Dissection the afternoon after death. From peculiar circumstances I was unable to obtain the presence of any medical gentleman.

The abdomen was opened in the usual way, by two divergent incisions carried down from the lower end of the sternum. The *omentum* was mostly adherent to the subjacent parts. The *liver* appeared pretty natural in size and texture, but was uncommonly yellow. The gall bladder contained rather more bile than usual. The pylorus to the extent of one or one and a half inches was much thickened and indurated: to the feel and also to the knife this diseased portion had almost the firmness and hardness of cartilage. Its inner surface was studded with firm and hard prominences, which stood out into its cavity: not much ulceration upon it—some, however, as I took up flakes of matter which were very offensive to the smell. A firm adhesion had taken place betwixt this diseased part of the pylorus and that portion of the left lobe of the liver naturally in contact with it.

The remainder of the stomach was not examined very particularly, but nothing unusual in regard to it was observed.

On opening the thorax there was nothing very striking in the appearance of the external surface of the lungs; there was less floridity, however, and a somewhat more withered aspect to those organs than is common. But the most remarkable appearance here, and doubtless in the whole body, was this: *in the left side of the thorax were portions of an apparently bony substance, imbedded in the lower part of the lung of that side*: these portions being taken out, weighed, undried, seven ounces, avoirdupois. This bony substance was not found exactly in a solid lump, but the portions of it grew near each other, and some of the lumps would have weighed three or four ounces: indeed, I broke the substance up considerably in removing it, and cannot tell how large a piece might have been formed before removal. The left lung was firmly adherent to the diaphragm, and so were some of the concretions: this lung also adhered considerably to the parietes of the chest; so did the right lung, but not as much as the left. There was no osseous matter in the right lung.

On examining the concretions more minutely, I found each lump composed of portions of, apparently, *bony matter*, cemented together by portions of a *white, fatty substance;* the proportions of these constituents varying in different lumps. The bony portions had the cancellated structure of the spongy bones, and nearly the same degree of firmness with the lighter spongy bones.

The *heart* was only examined by feeling with the hand—nothing unusual was in that way discovered. Owing to the lateness of the hour, and reluctance on the part of the deceased's friends, no farther examination of the abdominal viscera, or of any other part, was made.

I may remark that the swelling of the leg nearly subsided after death.

Hartford, Ct., 1837.

REVIEWS.

ART. XI. *General Therapeutics, or Principles of Medical Practice; with tables of the chief remedial agents and their preparations, and of the different poisons and their antidotes.* By ROBLEY DUNGLISON, M. D., Professor of Therapeutics, Materia Medica, Hygiene, and Medical Jurisprudence in the University of Maryland; formerly Professor of Physiology, Pathology, Obstetrics, and Medical Jurisprudence in the University of Virginia; one of the Physicians to the Baltimore Infirmary, etc. Philadelphia: Carey, Lea & Blanchard. 1836. pp. 580, 8vo.

The successful compilation of an elementary work, on an extensive and constantly progressive science, is always a very difficult task. Such a work ought to embrace, within limits of reasonable extent, in well defined and strongly marked outline, the great boundaries and the minor subdivisions of the whole subject treated of. It should present this subject to the naked eye of the learner, in its natural colours and proportions, without the intervention by the author of any refracting or distorting media of his own composition. It should tell the truth, and nothing but the truth, although it may be unable to tell the whole truth. It requires, on the part of its author, a rare combination of high and various qualities. He must be familiar with the whole past history, with the actual condition, and with the future prospects of the science which he teaches. He must see, not in dim and shadowy vision, but in the sober certainty of clear and open light, its multiform relations to its kindred sciences. He must understand its errors, past and present, as thoroughly as he does its truths. Then he must have a sound mind, with its powers harmoniously balanced, if possible; and if not in perfect equipoise, with the cautious and doubting tendencies preponderant. There must be no crotchets in his brain; he must be no keeper or rider of hobby-horses. With the power of fully comprehending his subject; of distinctly distinguishing, in his own consciousness, the true from the false, and the doubtful from both; he must, furthermore, be master of the art of presenting the clear and luminous conceptions of his own mind, clearly and luminously, to that of his reader. He should have the excellent faculty of adapting his form of words to the nature of his subject, seeking always the ornament of simplicity, directness and order; eschewing meretricious finery and pedantic stateliness of style, and avoiding also tameness, sleepiness and obscurity. Especially should the compiler of an elementary work, on any department of practical medicine, be possessed, in addition to the foregoing qualifications,

of a healthful and sensitive conscience. He should be no respecter of persons. He should be a medical cosmopolite, with no party prejudices or local attachments. He should see and feel the nature and extent of the responsibilities under which he acts. He comes forward as the official oracle and teacher of the young physician. His readers are chiefly from amongst this portion of the profession. They imbibe from him their doctrines, they follow his precepts; and since no less than the lives and health of their patients are the things at issue, it is all-important that the doctrines should be sound and the precepts true which are to be the basis of their practical conduct.

There are some reasons why a correct and comprehensive elementary treatise on the materia medica and therapeutics should be more difficult of execution than a similar work on most of the other branches of medicine. The improvement of the materia medica and of therapeutics has not kept pace with that of the other branches. They have been comparatively neglected. There has been less of rigorous, systematic observation devoted to them than to other portions of our science. The leading minds in our profession during the present century have been directed more particularly to pathology, physiology, &c., and to certain limited portions of therapeutics and materia medica connected with certain symptoms of pathology and practice. It is vastly more difficult than has generally been supposed, or than most of us are even now willing to admit or believe, to ascertain the actual and precise value of any given article or course of treatment, even in any one given disease; and the evidence upon which this value rests is in very many important instances exceedingly slight and doubtful. There is less positive knowledge on this subject than on most others in medicine. For these reasons, and for others which might easily be given, we repeat, that the satisfactory execution of a work such as we are now speaking of, must be a very difficult matter. That a work of this character was much needed amongst us before the publication of the book, the title of which stands at the head of this article, we are well aware; we think it as much needed at present as it ever was. The grounds of this belief will appear in the course of the following pages.

The first chapter of Dr. Dunglison's treatise is devoted to "General Principles," in which the following subjects, of very various character, are more or less fully discussed, to wit:—Therapeutics defined; instinctive action of recuperation; importance of bearing it in mind in the treatment of disease; cure by sympathy; expectant medicine; efforts of nature; crises; medical experience; science of medicine demonstrative; pre-eminence of therapeutics; therapeutical indications vary with medical theories; necessity of discovering the pathological lesion; rational therapeutics founded on rigid physiologico-pathological deduction; importance of discovering the cause of the lesion; etiology obscure.

It is not our purpose to make the present notice consist exclusively of a running commentary on the successive subdivisions of Dr. Dunglison's book; neither do we intend to make the title of the work a

mere text for a therapeutical sermon of our own—an occasion solely for the setting forth of our own individual views or opinions on this branch of medical science. It would be quite impossible, from the nature of the work itself, to present our readers with any thing like a full and profitable abstract or summary of its contents, in the form of an analytical review, without far exceeding the limits suited to a paper like the present. But while we shall endeavour to furnish our readers with a general knowledge of the work under notice, we shall also be obliged, in order that our criticisms of certain of the author's leading doctrines and opinions may be rendered intelligible, to state somewhat fully, and as explicitly as we are able to do, our own views on these subjects.

In the study of any one separate portion of a great and complex subject, a first and most important inquiry must refer to the nature and extent of the relations between this and the other several portions of the entire subject. The science of medicine, taken as a vast, comprehensive, and integral whole, is made up of many other sciences; each of which occupies its own appropriate section of the large and perfect circle, wears its own individual features, and accomplishes its own peculiar ends; and each of which is, also, more or less intimately, and by relations more or less direct, connected with all the rest. Certainly, it is important, in order to understand with any satisfactory degree of clearness the chief science itself, that we should have a correct conception of the mutual dependencies, and the bearings upon each other, of the subordinate parts of which it is composed. The only relations, however, which it is our intention to notice here are those existing between therapeutics and pathology. The end of therapeutics—its sole, exclusive end—is the removal or mitigation of disease; and for this or some other reason, it seems to have become an axiom in medicine, that therapeutical indications must always be deduced, directly and immediately, from pathology. So, Dr. Dunglison, in his preliminary chapter, following in the old track, which has been trodden by all the pathologico-therapeutical systematists, asserts and maintains the same principle. "In all these cases," he says, "as in every other, rational therapeutics must be founded on rigid physiologico-pathological deduction."

We shall take some pains to show that this immediate and intimate dependence of therapeutics upon pathology does not exist. That there is a near and close relationship between these two capital departments of medical science, we readily admit; but we do not believe its nature to be such as it is generally stated to be. Therapeutics does not flow directly from pathology. The word *deduction* is not the link which binds the former to the latter. No therapeutical indication can be inferred, directly, and without the intervention of some other aid or agency, from any known pathological condition. No remedial measures can be based, originally and exclusively, on a simple knowledge, however exact and certain, of the seat, degree, or nature of a morbid action. This, at any rate, is the general rule. We

might, indeed, in a few cases, independent of any aid derived from experience, infer with a reasonable degree of probability, the appropriate remedy. But these cases, on close examination, would be found to be composed mostly of lesions where the indication consisted merely in the removal of an obvious cause. The first man, who ever suffered with a splinter of wood under his finger-nail, might very properly come to the conclusion, that the withdrawal of the splinter would be the first and surest means of removing the pain, although this therapeutical indication had not been taught him by his own experience or by that of others. We may suppose, that pathology had explained to us the condition of an organ suffering with recent acute inflammation. Looking at the undue activity of the circulation, and the great distension of the blood-vessels, we might, perhaps, be led by simple, unaided, *à priori* reasoning to the abstraction of a part of the superabundant blood. So we might, in the same manner, regarding the unusual heat of the part, where this could be ascertained, resort to the application of cold. But with these, and some few other analogous exceptions, we do not, and we cannot, deduce our therapeutics from our pathology. The case seems to us almost too plain to be argued, and yet nothing is so common as the contrary assertion. We are constantly told that the great essential prerequisite to the successful and rational application of remedies, is a knowledge of the seat and nature of disease; that the latter once clearly settled, the former follows as a matter of course; that the one *depends upon*, and *rises out* of, the other. The necessity of this knowledge, so far as it is attainable, we admit; but we deny the soundness of the reasons on which this necessity is usually placed.

Talk about it as we may, therapeutics is an art resting solely on rational and philosophical empiricism. We are often, it is very true, obliged to resort to remedial measures in the treatment of diseases, the seat, nature, and complications of which are more or less novel or obscure; which may, indeed, be such as have never before been manifested in the living organization. Here we are, to a certain extent, driven to the shelter of analogy and to *à priori* reasoning. So far as the pathology in some of its elements, or in their aggregate combination, resembles other morbid states with the treatment of which we are already familiar by direct experiment, so far we transfer, rightly enough, the same views and the same treatment to the new malady. But let us not deceive ourselves even here. Our *à priori* reasoning is itself acting under the guidance, uncertain though it be, and walking in the light, feeble though it be, of experience; and the first steps of our treatment are wholly tentative. There may exist some new, and as we had supposed, perhaps, an unimportant and subordinate element in the series of morbid phenomena, constituting the new disease, the presence of which may render the treatment *indicated* by analogy entirely useless, or worse than useless, and experiment may finally demonstrate the necessity of an opposite mode of management.

We have alluded to the stress which the systematic therapeutists of the day put upon a knowledge of the *nature* of the morbid affection,

as preliminary to its successful treatment. But what do we know of the nature of disease? What two leading pathologists are agreed on this single point? What is inflammation, that every day disease, always before our eyes and under our hands? Is it the same *ipse morbus* in every organ, in every tissue, during its successive periods, and under the all-controlling agency of varying epidemic influences? Does any knowledge, that we may profess to have of its nature, direct us in its management? On the contrary, do we not often find it yielding under certain conditions to one course of treatment, and under certain other conditions, to an apparently opposite one? Is phlegmonous erysipelas arrested by the same means that will cure acute inflammation of the knee-joint? Will a solution of nitrate of silver, dropped into the eye, relieve a conjunctivitis of six hours standing, arising from the presence of a grain of sand? Will the purulent ophthalmia, where there is less redness, perhaps, less local suffering and less constitutional disturbance than in the slight affection, just mentioned, give way to a few leeches and a mucilaginous lotion? Our knowledge of the most efficient treatment of inflammation is the single, direct result of naked, unaided experience. Our knowledge of the appropriate treatment of the almost infinite forms and modifications of this morbid state is, also, the simple, direct result of naked, unaided experience. Having ascertained, by experimental researches, the most effectual method of controlling inflammation, when seated in a certain tissue or organ, or occurring under any given circumstances, the logic of analogy might have led us toward the true treatment of a similar morbid condition, existing under more or less similar circumstances; but this same logic might, also, have led us to the worst possible treatment. And this is true of all diseases. Who ascertained and demonstrated the relationship between mercury and syphilis? Was it scholastic PHILOSOPHY, now in robe and slippers, meditating apart and alone, in her quiet closet; now aloft on her airy wings, piling up and adorning her gossamer castles in the sky; or was it EMPIRICISM, that humbler handmaid of our beneficent art, with her senses always awake and her fancy asleep, or obedient ever to the voice of her reason, and with no *muscae volitantes* swimming before either her bodily or her mental vision? Could PATHOLOGY, poring over the essence of the venereal virus, and studying the nature of the morbid action which its presence excites, even if she could have ascertained these things a thousand fold more perfectly than she has yet done, have ever led us, *by induction*, to the appropriate antidote and remedy? Whence came our knowledge of the action of cinchona in intermittent fever? Wherein consists the resemblance between this substance and arsenic, that should have led us by *à priori* reasoning to the use of the latter in the cure of the same disease? How is the most successful treatment of typhus fever to be ascertained? Is it by *deductions* from its *pathology?* The morbid alterations in this disease, their successions and dependencies, have been very thoroughly investigated. The condition of the suffering organs is very satisfactorily known. The relations between the external manifestations, or

symptoms, and the organic lesions, is pretty well settled. The natural history of the disease is in a fair way of being fully completed. Its specific characters are made out, so that it is easily and certainly recognised. One of the essential elements of its pathology consists in a morbid alteration of the glandular bodies of the small intestines, and of the mesentery; an alteration which we call inflammatory. Knowing this, can we thence *infer* the most appropriate treatment? Most certainly, we cannot. The pathology of true typhus is now as fully and as positively known, perhaps, as that of any other disease, so complicated in its pathology as this. Can we now *deduce* its proper treatment from its admitted pathology? Most certainly, we cannot. This treatment is yet to be discovered. At the outset of our therapeutical researches here, we might, indeed, if we had no better guides, listen to the suggestions of analogy. But let us beware of that logic which teaches us to place implicit faith in the seductive promises of an over-confident, generalizing, and systematizing philosophy. The question, which we are called upon to solve, in the case of this disease, and of all other diseases, is, not whether this remedy or this method is a rational or a philosophical one; not whether it is in accordance with our notions of the pathology of the disease, but whether it is or is not a successful one. What matters it whether our treatment be antiphlogistic or incendiary, expectant or perturbating, if, by it, we save our patients from suffering and death?

We shall, probably, be met here with the old objection, founded on the difficulty of applying this test. But the difficulty of its application does not prove that the test itself is not the true one. Dr. Dunglison says,

"It is obvious, that, *cæteris paribus*, therapeutics should be the touchstone of medical skill: the number of cures ought to decide the qualifications of the practitioner; but it so extremely difficult—nay, impossible—to estimate all the deranging influences;—so many modifying circumstances are perpetually occurring, that we cannot decide that any two cases are precisely identical. Hence we can never judge of the comparative success of different practitioners, on which so much stress is placed—and placed erroneously—by the public. Owing to these difficulties also, we have such a diversity of sentiment regarding the treatment of the same affection."

We are not prepared to assert that the *public* are justified in judging of the merits of a practitioner by his apparent success. So far, indeed, as the opinion contained in the above extract refers to the public, it is undoubtedly correct, and this for plain and obvious reasons. But we do assert, that the real value of a remedy, or of a method of treatment, in any given disease, and of all remedies and of all methods of treatment, in all diseases, must be judged by their actual and relative success, and by this alone. The "deranging influences," and the "modifying circumstances," which are perpetually occurring, will, to be sure, prevent us from deciding that any two cases are precisely alike. We may be very sure, that no two cases ever are precisely identical. But still these "influences," and these "circumstances," constituting, as they do, the difference between different cases, are none the less susceptible of being studied and *appreciated.*

It is this very appreciation upon which, in part at least, our diagnosis rests. Their importance as disturbing causes can be ascertained and estimated. And it must be ascertained before the natural history of the disease is fully made out. They constitute as much a part and parcel of this history as do the most essential morbid alterations, or the most prominent and invariable symptoms.

We are quite willing to go as far as Dr. Dunglison goes in insisting on a thorough knowledge of the seat and nature of the morbid lesion, so far as these can be ascertained, as an indispensable pre-requisite to an enlightened and successful practice. But this preliminary knowledge is essential only as an element in our diagnosis; it is of service only so far as it helps us to recognise the individual morbid condition with which we have to deal, and so to identify it, more or less perfectly, with the same condition whose relation to certain remedies and modes of management experience has already pointed out to us.

It is a little remarkable, that a work which founds so much of its claim to excellence and authority on the importance which it gives to pathological knowledge as the only safe basis of therapeutical indications, and which is the production, too, of a distinguished and experienced compiler—of a man who must be supposed to be even, at least, with the progress of medical science—should exhibit, so frequently as it does, evidences of an erroneous or doubtful pathology. On page 90 we have the following explicit and unqualified statement: "Phthisis pulmonalis is a chronic inflammation of these organs, (the lungs,) ending in suppuration and disorganization." At page 109 it is asserted that laughter is a *not unfrequent* exciting cause of apoplexy. At pages 186 and 187, Dr. Dunglison speaks of a patient of his own, affected with hæmatemesis and *dropsy of the lower belly*. In some observations on the use of emetics in whooping-cough and asthma, page 221, Dr. D. says:

"Both these diseases are dependent upon a morbid condition of the nerves of the respiratory organs—the pneumo-gastric especially—which modifies the contractility of the muscular fibres, that surround the minute bronchial ramifications; and this state of the nerves is generally perhaps connected with more or less morbid derangement of the parts of the cerebro-spinal axis, whence the nerves originate."

It must be gratifying intelligence to the laborious pathologists of the old world, as well as to those of the new, that the pathological problem of these two affections, especially of the latter, has been, at length, after so much investigation, and amid such widely differing opinions, so satisfactorily and positively solved. We might cite many other instances similar to these, exhibiting either loose views of pathology, or a reprehensible carelessness of phraseology in stating them.

We have thought it proper to state our views on this subject at some length, because we believe them to be not only true, but also of some practical importance; and because the author of the work before us inculcates so earnestly doctrines of an opposite character.

It is difficult to say whether medicine has suffered most from a

partial and one-sided observation, or from premature and hypothetical generalizing—from false facts or from false reasoning. The latter is the legitimate offspring of the former; and although each may very well exist without the aid and presence of the other, they are very commonly found together. We deceive ourselves when we boast, as we are so much in the habit of doing, of our discipleship to the true Baconian philosophy—of our faithfulness to the rules of cautious, impartial observation, and to the strict principles of an upright, a rigorous, and a single-hearted logic. Before our science can take its proper place by the side of the other sciences, and confer that benefit on humanity which it was intended, and which it is able to confer, it must endeavour to become in truth what it has, indeed, long professed and claimed to be, a demonstrative science. Its cultivators must begin to practice what they have so long been preaching. The standard writers of the present day, on therapeutics and materia medica, are constantly indulging in what they may deem very philosophical, but in what seems to us very fanciful, *explanations* of the intimate and peculiar action of medicines on the living tissues with which they come in contact, or which they may affect more remotely. More pages are often taken up with elaborate disquisitions on the hidden, mysterious, and utterly unascertainable *modus operandi* of a remedy or a class of remedies, than are given to the therapeutical properties and uses themselves of the article or the class.

Dr. Dunglison's book, like nearly all others upon the same subject, is overburdened with these attempts to explain this precise and intimate *modus operandi* of medicines. The action and operation and effect of every article must be accounted for pathologically, physiologically, philosophically, rationally. It is astonishing to witness the pertinacity, activity, and ingenuity of this "*detestable mania for explanation*," as the authors of a recent and excellent French work on materia medica and therapeutics, call it. It is not enough that any given medicine or mode of treatment *cures*. This knowledge would be mere empiricism, unworthy altogether of the scientific physician. We must know *how* it cures, and *why* it cures; and unless these things are made out, we are bound to believe that it does not cure at all; that we have been mistaken, and that the two circumstances of the use of the remedy and the cure, which simple observation had taught us sustained to each other the relation of cause and effect, must have been only accidentally so connected. If any one circumstance exhibits more strikingly than another the folly and absurdity of this passion, it is that of the multifarious and contradictory explanations that are continually and successively invented and maintained. There is hardly a page of Dr. Dunglison's book which does not contain more or less paper, spoiled, and worse than spoiled, by magisterial and confident statements of these *hows* and *whys* and *wherefores* of pathology and therapeutics. Does any one doubt this? Then let him study the book for the purpose of settling this particular point; and when he comes upon an explanation, let him inquire whether it is anything more than a conjecture. We will illustrate our remarks

by one or two examples, taken almost at random. At page 81, the author, in speaking of the difficulty with which absorption is accomplished in malignant cholera, and in other diseases of the gastro-intestinal mucous surface, says, "It is on this account, also, that there is frequently so much difficulty in affecting gastro-enteritic patients with mercury." The reason here given, so confidently, and so much as a matter of course, why the system is not affected by the mercury, may be the true one, or it may not be. Do we really know anything beyond the fact, that in certain morbid states of the body it is difficult or impossible to produce the specific effects of mercury? Certainly we do not. Again, antispasmodics are such, according to Dr. D., only through their revellent or derivative operation. He says, at page 382, that direct antispasmodics are revellents only, "acting by virtue of the new impression they make on the gustatory or gastric nerves, and thus deriving from the inordinate action going on in some other portion of the nervous system." Now, as we said before, and as we readily admit in all these cases, this may be true; but we say, also, in this case, and in all the others of a similar kind, that it may be false; and we say, furthermore, both in this case and in the others, that the chances are in favour of the latter contingency. Is it at all unreasonable, or unscientific, or improbable, to suppose that there are substances which allay spasmodic action by a direct, immediate operation on the unduly and irregularly excited organs and tissues? Are not observation, analogy and sound reasoning all in favour of this supposition? If the acknowledged antispasmodics act only by their revulsive agencies, it must even then be admitted that there is something peculiar and specific in the *nature* of the revulsion which they occasion, so that, after all, this hypothesis does nothing towards simplifying our notions of their *modus operandi*. We do not wish to be understood as asserting, positively, that there are any such medicines as simple, direct, absolute antispasmodics, controlling inordinate and irregular muscular contraction by an immediate influence on the nerves going to the disturbed muscles, and without the intervention of any other modification or influence upon any other tissue. We do not say this for the simple reason, to us always a good and sufficient one, that there is no conclusive evidence that such is the case. We only say, that this proposition is quite as reasonable in itself and quite as likely to be true as that of Dr. Dunglison.

Passing over our author's second chapter, which is devoted to a consideration of the circumstances that modify the therapeutical indications, such as age, sex, original conformation, habit, climate, &c., we shall make the third chapter the occasion of a few further remarks on this disposition to explain and interpret the philosophy of therapeutics, and on the fondness for generalizing to which we have already alluded. The chapter treats of the modes of action of medicines, and of their classification. Dr. D. says that the action of medicines is either local and direct, or general through local influence. The general action, according to his arrangement, is threefold, to wit: by means of the nerves, by absorption, and by revulsion. Now, we hate

hypercriticism and mere verbal fault-finding with a good author as heartily as anybody can; and we are not about to object to this division of Dr. Dunglison's, because we think it worse than various other analogous arrangements made by other therapeutists. It may be better than any of its predecessors, and it is not our intention to attempt to settle the relative merits of the different classifications or their respective claims to superiority. We object to this, and to all, as imperfect, hypothetical, erroneous. Does this objection need developement or illustration? Is it founded in reason or truth? Let us see.

In the first place, then, we admit that there is some foundation in nature for the primary or classific division of remedies into local and general. But even here the boundary line between the two classes is oftentimes shadowy and undefined. A refrigerant lotion, or an emollient, may act locally when applied to a local inflammation. But even in this simple case the localization is topographical merely. The action of the simple remedy may be very complex. The nervous tissue, the vascular, the dermoid, the cellular and the muscular may each receive, individually, a part of the new impression. In regard to the great majority of active remedies, administered internally, what grounds have we for fixing with any degree of confidence the precise extent of their agency? Dr. Dunglison says that certain remedies act through the nervous system, others through absorption, and others by revulsion. All this may be true, so far as it goes, but there is no evidence that it covers the whole ground; and inasmuch as there is not, it is essentially and radically wrong. It is very probable, to be sure, that prussic acid, for instance, acts primarily, and it may be, exclusively, on the nervous system. The rapidity of its operation seems inexplicable on any other theory. It is very certain too, that many substances are absorbed; that they enter into the mass of circulating fluids, red and white. But what do we know about this beyond the simple fact that it is so? The substance is in this way brought into direct relation to the living fibre, but how it acts on this fibre we do not know. The nature of the impression made by it is a mystery. The third general mode of action is by revulsion. By this is meant, that irritating substances, applied to certain parts or tissues of the body, will, under certain circumstances, diminish or remove morbid actions going on in certain other parts or tissues of the body. And is not this the sum total of our knowledge on the subject? It is fashionable, we know, and it is considered *scientific* and rational to philosophize on the matter, and to explain *how* and *why* it is that this effect is produced. The *rationale* of this medication has been sought for and found in the old and oft repeated axiom, that two morbid actions cannot very well go on in the system together. But how far is this from being even generally true. It is now well settled that, in some diseases, in typhus for example, there is a strong disposition in very many of the different organs and tissues to take on acute inflammatory disease, one after another, or simultaneously even; the intensity of each being increased rather than diminished by the spreading of the morbid action over different points of the economy. How do

we know that mercury, taken as an alterative, acts on this principle of exciting a new disease incompatible with the old one for the cure of which it is used? Is the revulsive *modus operandi* in this case any thing but absolute gratuitous assumption? Is it any thing but whole cloth hypothesis? There are certain morbid conditions which mercury generally removes, and we have just as much reason for saying that the mercury acts directly on these morbid conditions, as we have for saying that it excites a new disease in the system, and thus drives out the old one. Let us be contented with asserting what we really know, which is simply this—that the mercury removes or mitigates the disease. Let us ascertain, with all possible accuracy, by long continued, varied, honest, careful observation, every circumstance which exerts a favourable or an unfavourable influence on the remedial action of the article, and therewith let us rest satisfied. In this, and in all other cases, the only legitimate object of investigation consists of the appreciable phenomena growing out of the relations existing between the remedy and the diseased human body. When we have ascertained the laws which govern these phenomena, we know all that we can know, and all that we need to know.

If fanciful and speculative men choose to amuse themselves, or the rest of the world, with their conjectures and explanations, surely we have no objection. They may find the occupation as pleasant and as profitable as any other species of air-castle building; but let them not dignify this guess-work with the misnomer of inductive philosophy; and let them cease to think that they are doing any thing to advance the utility of medicine as an art; the object of which is the mitigation of human suffering and the lengthening out of the term of human life.

The latter part of the third chapter is taken up with the subject of classification. Our author, as every new writer on therapeutics is in duty bound to do, makes some strictures on the classifications of his predecessors, and adopts a new one of his own. We do not wish to indulge in any further criticisms on Dr. Dunglison's arrangement of his classes. Next perhaps in unprofitableness to the building up of these systems, is the labour of pulling them down. The greatest objection we have to our author's, is merely that it is a new one, and that we have thus an addition, utterly useless, made to a catalogue already too long. The old arrangement, based on simple observation and common sense, is the best that can be adopted in the present state of therapeutical science. This arrangement is founded on the most prominent and obvious action upon the body of the different articles of the materia medica. When a substance is found by experience to possess the property of directly allaying irregular spasmodic actions of the muscular fibre, let it be called an antispasmodic, and let all other substances endowed with a similar property be arranged in the same family group. Let the same thing be done with emetics, tonics, cathartics, narcotics, &c. Let certain other articles, such as cinchona, mercury, arsenic, iodine, &c., the administration of which, in moderate but repeated quantities, is attended by slow, gradual and

peculiar changes in the economy, be denominated, provisionally, at least, alteratives or specifics.

And here, lest Dr. Dunglison, or any of our readers should be alarmed at our use and sanction of the concluding word of the last sentence, as they may already have been by our use of the word empiricism, we will state, as concisely as we can, what seems to us to be the truth in regard to the specific action and character of the articles of the materia medica. With these remarks we shall conclude our general observations upon those leading doctrines of the book before us, about which we venture to dissent from the opinions of its author.

It is quite natural that medical writers should have been, as they always have been, and as they still are, fond of classifying the several departments of their science and of generalizing its principles. In proportion as a science approaches the positive and perfect, does it naturally and necessarily resolve itself into clear and well established laws; its several parts assume their appropriate places and relations, as the atoms of a salt in solution do in the process of crystallization. Beside the influence of this natural connexion between arrangement, order, classification on the one hand, and the advanced state and certainty of science on the other, there is, to all minds, a seductive charm in the simplicity of broad generalizations. From this source, more than from any other, probably, arose the wide-spread and long-continued popularity of the Brunonian doctrine; and it may, we trust, be safely enough intimated that this same cause has had no very subordinate agency in the rapid propagation of a certain favourite system of pathology in our own day. The many headed monster, NOSOLOGY, was the legitimate offspring of this spirit, a spirit still vigorous and prolific, although that hydra specimen of her progeny has long since been gathered to the capacious but crowded sepulchre of its multitudinous kindred. Dr. Dunglison arranges the articles of the materia medica, exclusive of such as act mechanically or chemically, in two great classes. The articles in one of these classes increase, locally or generally, vital action; those in the other diminish it. A third class is added by other modern systematists, to wit: the revulsive. Now these arrangements may be plausible enough, but what claim have they to the positive and demonstrable attributes characteristic of true science? Dr. Dunglison places nauseants in his class of sedatives, and emetics in his class of excitants. By what therapeutical jugglery is tartarized antimony spirited alternately backwards and forward, through or over the broad and high wall of partition which separates the two classes? It is not our object now, however, to comment particularly on the arrangement of Dr. D. It is the purpose of these remarks to show that this entire spirit of general classification is unfriendly, so far as it goes, to a close, discriminating study of the *peculiar* properties of the separate articles of the materia medica; and that the great object of our therapeutical researches, on this particular point, ought to be to ascertain the exact individual *specific* value of these separate articles. *No single article of the materia medica,*

which is not endowed with peculiar properties, clearly defined, and, on this account, having, or capable of having, an especial relation to certain morbid conditions, ought to be retained in the list of remedial agents. Tartarized antimony and ipecacuanha are, both of them, emetics; but, it will hardly be pretended that their operation on the stomach, and, through this organ, on the entire system, is identical in its nature, differing only in activity. Each has its peculiar action. Similar remarks may be made in regard to the other important articles of the materia medica; and any generalization, the tendency of which is to merge these peculiar properties in some common family character, is unfriendly to the progress and certainty of therapeutical science. This spirit of generalizing, which we are endeavouring to combat, is objectionable not merely on the grounds of its abstract or scientific falsity, if we may so speak. If this were all, we could easily let it pass unnoticed. But this is not all. The error is full of practical danger. It influences directly and unavoidably our whole method and conduct in the selection and application of remedies. Imbue a man thoroughly with this spirit and he will be little careful in nice discrimination. An emetic with him will be simply an emetic; he has an indication to fulfil, and it will matter little what the particular article is which he uses. We think that the practice of the ultra disciples of some modern systems of medicine may be *invoked*, as Dr. D. says, in illustration of these remarks. In the first place, a simple, positive system of pathology is assumed. In the next, a classification of remedial agents is made, which exactly dovetails with this system. The indication is deduced from the pathology, and then any article which happens to be found in the proper category is used to fulfil the indication.

It would be easy to extend to a much greater length our observations on the foregoing subjects. We are well aware that some of the principles which they involve need fuller developement; but the space that we have already devoted to them admonishes to leave them for the present. We have been free in our animadversions, because the pages of Dr. Dunglison's book are overlaid and pervaded with the ideas and doctrines to which these remarks are opposed; and because we think the doctrines themselves essentially wrong in their philosophy, and in their practical tendencies unfavourable to the advancement of therapeutical science.

After having disposed of his preliminary generalities, of his great principles, on the soundness and value of which we have now expressed ourselves with the freedom which the interests of truth always require, and, we trust also, with the candour and courtesy which the same interests no less imperiously demand, Dr. D. enters more immediately the field of therapeutics. We cannot go regularly through all the successive chapters and sections of this portion of the work, for the purpose either of criticism or analysis. As, however, we have thus far had the floor pretty much to ourselves, and lest we should be accused of unfairness in not allowing the author to be heard in his own behalf; and for the more grateful and agreeable purpose, further-

more, of commending to the attention of our readers some of Dr. Dunglison's views on matters of great practical moment, of every day importance, we shall make up, for the most part, the remainder of our notice with such extracts as may best illustrate the general character and composition of the work, and with such, also, as may be practically interesting and valuable to our readers themselves.

The first section treats of excitants proper,—"agents that increase the organic actions by impressing the contractility of the part to which they are applied; the excitation thus induced being extended, or not, to the rest of the system." We quote from this section the author's remarks on the use of excitants in the treatment of what he calls, loosely enough, we think, *fevers*. This point of practice is certainly an important one—one that has for a long time occupied the attention of physicians and been the occasion of much controversy. Whether the practitioner will find any of his doubts removed, or his principles of action rendered more intelligible and explicit by the following directions, we must leave him to judge.

"It need scarcely be said, that the use of excitants must be invoked with extreme caution in fevers. At one time—as I have already remarked—the great indication, in these affections, was supposed to be,—to obviate the tendency to debility and death, and, accordingly, antiphlogistics, especially of the depleting kind, were used with extreme caution, and every thing was done to husband the strength so as to permit the patient to bear up in the last stages. A better system of medical philosophy fortunately now prevails, and it is universally admitted, that few, if any, die from febrile debility, and that the fatal influence is seated in the over-irritation of some tissue, under which the patient gradually succumbs.

"The efforts of the practitioner are, therefore, properly directed to the prevention of irregular action in organs, and to the removal of irritation or inflammation, wherever existent, and, under this philosophical treatment of fever, excitants are, of course, never employed during the early periods, and it is only when the powers of life begin to flag, that a question arises as to the propriety of their adoption. Even in the very lowest stages of the worst grades of typhus, this question is not always very easily settled. There is generally more or less local irritation present—often in the lining membrane of the stomach and intestines—and many of the signs of debility are dependent upon the depressing influence exerted on other functions by the predominance of irritation there.

"We often observe this depressing influence singularly evinced in the sanguiferous system in diseases of the intestinal canal, especially such as affect the lining membrane. My friend, Professor Smith, of the University of Maryland, and myself attended, some time ago, one of the students of the university, who, after having been present at the lecture of the Professor of Obstetrics, in the evening, was attacked with violent vomiting, but without any abdominal tenderness or other uneasiness. On the following morning there was some slight tenderness on pressure, and the vomiting persisted. He was cupped over the abdomen, although neither the state of the pulse, skin, nor the other symptoms appeared to indicate inflammatory action. During the day, he gradually sank, and expired the same evening. On examining the body, a portion of the ileum was found contracted for the space of several inches, but this contraction must have been forming gradually. The lining membrane exhibited but slight signs of irritation; yet the cause of death was, doubtless, seated in this portion of the economy; and the only way we can account for it, is by in-

voking the intimate and extensive sympathy which exists between this part of the frame and the great centre of the sanguiferous system, so that a slight irritation there may produce marked depression, and even arrestation of the circulatory function. There is something, however, extremely unaccountable in these cases. The peristole of the digestive tube is but indirectly influenced by the brain and spinal marrow. Its functions appear to be principally carried on under the influence of the ganglionic nerves. The heart itself is equally abstracted from direct cerebro-spinal influence, and, indeed, from almost all nervous influence;* yet, in enteritic irritation, we find the whole circulatory apparatus oppressed, as it were; and this oppression, if not removed, rapidly terminating in depression; whilst, in the comparatively harmless disease—*tonsillitis*, or inflammatory sore throat—the action of the heart is inordinately excited, and the whole vascular system is thrown into violent agitation.

"It is generally considered proper to have recourse to excitants in fever, when the pulse becomes feeble and fluttering; the tongue moist perhaps, but with a dark fur; the teeth covered with sordes; the skin bathed in a cold, clammy sweat; or, if hot and dry, with concomitant symptoms of debility; with sinking down in the bed, and low muttering delirium; the tongue tremulous, and protruded with difficulty,—indicating great debility of the nervous system; petechiæ or vibices, produced by transudation of the blood through the loosened parietes of the vessels, &c. &c. But it is impossible to lay down any positive rules for the guidance of the practitioner, and it is better, that he should even allow the signs of prostration to become marked, before he passes to the too early use—as it may prove to have been—of excitants. Dr. Rush, as I have before remarked, considered, that there was a period in fevers, at which blisters might be applied as stimulants with great advantage; but, if used before this period they would be productive of mischief. It is obviously, however, impossible to fix upon any such point with accuracy; and in this, indeed, the main difficulty rests. If it could be decided on by any specific signs, it would be but necessary to apply the antiphlogistic or the stimulating medication accordingly. Vesicants are, however, by no means the best agents to be employed as excitants. In the low conditions of the frame, in which they are conceived to be indicated, the discharge of a large quantity of the serous part of the blood cannot fail to add to the debility more than the excitant property can detract from it; whilst they produce excessive irritation, and are, withal, transient in their operation. A more permanent excitant is, therefore, better adapted to these cases; and internal stimulants—as wine—are preferred, the quantity being carefully regulated so as not to stimulate beyond the due degree.

"Under another head, we shall see, that epispastics may be employed with decided advantage in fever, but not with the view of inducing general excitation.

"Whenever stimulants are esteemed necessary in fever, the fact before adverted to must be borne in mind, that their operation is apt to be followed by corresponding depression. They should be administered, consequently, so frequently, that the depression has not time to intervene, care being taken, that they are not given in such doses as to excite beyond the proper point; and, if their operation be salutary, they will be found to detract from, rather than add to, the febrile irritation; if, however, the febrile symptoms should be manifestly increased under their administration, they must be discontinued—but discontinued gradually—for the reasons just mentioned."

We do not wish to be captious, but we should like to know what would be thought of the practitioner who, when he found the febrile excitement of his typhus or his scarlet fever patient manifestly in-

* 'Human Physiology,' First Edit. ii. 133, and Second Edit. ii. 144.

creased under the administration of stimulating medicines, should be careful to discontinue them *gradually*. Is it necessary that we should call the notice of the attentive reader and the cautious reasoner to the case of the student? Was there ever an instance of more utterly gratuitous assumption, of more naked and wide conjecture, than that which attributes the sudden death in this instance to the *gradually formed* contraction of a portion of the ileum, the lining membrane of which exhibited but slight signs of irritation?

Passing over the two sections on tonics and anthelmintics, we come next to the class of astringents. We have nothing to say of this section, except to offer a remark or two on the confidence with which the author speaks of the uselessness of all astringent remedies, unless they can be brought into direct contact with the surface from which the preternatural discharge takes place. "It is manifest," he says, "that in all increased discharges which occur from parts that can only be reached through the medium of the circulation, no signal advantage can be expected from the administration of astringents." And the reason why we are to expect no signal advantage is this, not that experience forbids us to do so, for the language of experience is quite the other way, but because we cannot see, or rather because Dr. Dunglison cannot see, *why* any advantage *should be* looked for. The astringent substance, if introduced through the medium of the circulation, must come in contact with the diseased surface—that of the uterus or urethra, for example, even if it reaches this surface at all, so changed and diluted that it cannot produce any considerable effect upon it; or rather we do not see *how* it can, and *therefore* it does not. No appeal or reference whatever is made to the teachings of experience. We are told by a man sustaining the high character of a practical physician, and performing the responsible functions of an authoritative teacher from the chair and through the press, that sugar of lead or sulphate of copper can be of little or no use in arresting or diminishing excessive discharges from any surface to which it is not immediately applied, *because* it is difficult for a *rational* therapeutist to see *how* or *why* it should be of any use. If this sort of idolatry in medicine—this worshipping of the false gods which our own hands have fashioned—affected matters of abstract faith only, we should be well content, as we have already said, to let it pass unrebuked; but when it comes to influence, so seriously and vitally, our works as well as our belief, it is quite essential to our salvation, or rather to that of our patients, that the false doctrine should be exposed.

The two following sections are devoted to emetics and cathartics. We should leave the second, as we do the first, without comment, did we not feel ourselves bound, in conscience and duty, to notice the following very extraordinary assertion;—"In the various head affections, and especially in encephalitis,—whether involving the brain or its membranes, or both—cathartics would clearly be advantageous, by virtue of the revulsion they effect, did not the inconveniences, to which the patient is subjected by the motion necessarily attendant on their operation, often preclude their employment." If

we thought it within the limits of possibility, that a single regularly educated practitioner,—that any one who will be likely to read the book before us,—however young or inexperienced, should be deterred from a practice, the necessity of which is so well settled and so unanimously admitted as that of free and active purging "in the various head affections, and especially in encephalitis,—whether involving the brain or its membranes, or both,"—by this paragraph of our author's, we would give a moment to the exposition of its dangerous errors. But this possibility can hardly exist, and we leave the sentence and the section without further comment.

We pass over the sections on emmenagogues, diaphoretics, errhines, diuretics, expectorants and sorbefacients. The last mentioned class consists of medicines which promote absorption. Among other agencies endowed with this property, the author classes "mental" sorbefacients. "Of these," he says, "we have examples in the effect of the imagination in discussing tumours of various kinds. Some of these growths are possessed of but little vitality; and if the nervous and vascular influence be detracted from them, they speedily die. *This is the way in which charms remove warts.* It is a common popular superstition, that if we steal a piece of beef, rub warts with it, then bury the beef, or throw it over the left shoulder without looking behind us, as the beef rots the warts will decay; and that a dead man's hand, rubbed nine times on a wen or an enlarged gland, will dispel it; and such is the occasional result." The removal of warts by such a process as the stealing of beef, rubbing the pathological part with the stolen article and then burying it, or throwing it over the shoulder without looking behind us; or by the simple, more direct, and withal the honester one, of selling these verrucous excrescences, by a fair business transaction, to some accommodating neighbour who is willing to purchase, is thus philosophically accounted for, and fairly installed within the domain of scientific therapeutics.

The next section, devoted to revellents or derivatives, seems to us to be a better one than any of its predecessors. We shall do ourselves the pleasure, our author the justice, and our readers the profit of quoting some of Dr. Dunglison's observations of a practical nature from this section. They are sensible and judicious.

"The inflammation of the skin, caused by vesicants, is occasionally attended with fatal consequences. It is of the erysipelatous kind, and, under particular circumstances—as regards age, condition of the system, &c.—the inflammation eventuates in gangrene and death. In very young children, great irritation is apt to be induced by blisters, and, if the child be labouring under any morbid condition of the dermoid tissue,—such, for example, as is present in measles or scarlatina, the inflammation may terminate unhappily. To obviate this, when vesicants are esteemed necessary in the diseases of infants, they should not be permitted to remain too long on the part. From four to six hours will be sufficient, and a piece of fine gauze or of tissue paper may be placed between the blistering plaster and the skin—if cantharides be used—in order that no particle of the flies may adhere to the vesicated surface. We can hardly imagine an occurrence more disagreeable to the philanthropist than that of a patient dying, in consequence of the application of an agent from which he expects a cure, or at least a mitigation of the symptoms; great caution is there-

fore necessary in the use of these agents, in very early life, especially in the diseases referred to. I have known three or four cases of death manifestly accruing from the use of blisters under such circumstances, although it is probable, that in most of the cases a fatal event might have ultimately resulted, from the disorganization, produced by the mischief for which the blister was recommended.

"There is another great inconvenience, attendant upon the employment of vesicants composed of cantharides. This is—the absorption of the cantharidine, which enters the circulation, and proceeds to the urinary organs, giving rise to strangury, and, at times, to intense vesical irritation. That this is the mode in which the effect is produced,—that is, by entering the circulation,—is demonstrated by the fact, that the intervention of tissue paper, or of gauze, although it may not prevent vesication, effectually obviates the strangury;—the tissue paper preventing the absorption of the cantharides, which would otherwise have been effected. Yet, some have referred the strangury, in such case, to sympathy. Were this explanation correct, the tissue paper or gauze ought not to prevent it, as the vesication is accomplished through them. At times, it becomes necessary to apply the blistering plaster over a surface, which has been scarified in the operation of cupping. The only precaution, here again, requisite, is to cover the wounds, made by the scarificator, with tissue paper."

"With regard to the question—whether a permanent or an intermittent revulsion is more efficacious?—I do not think that much dissidence now exists amongst therapeutists. The majority are unequivocally in favour of the latter plan, although circumstances may often induce them *practically* to have recourse to the former. The reasons, in favour of this preference, are cogent. When an artificial irritation, accompanied, or not, with increased secretion from the part, has been established for some time, it ceases, in a great measure, to be a morbid condition, and becomes, as it were, a part of the healthy function, so that it cannot be arrested, without inconvenience being apt to result, and without danger of a centre of fluxion being established in some internal organ, more disposed than others to assume the morbid condition. In this way, many discharges, the result of morbid action, become, in process of time, healthy, and cannot be officiously interfered with. On the other hand, if a succession of irritations be produced, the system never becomes habituated to them, and the repetition of the irritation, after the lapse of a short period, occasions the same beneficial impression, as on its first employment. Hence it is, that a succession of vesicants, and, indeed, of every variety of epispastic, is to be preferred to a more permanent application—and that issues and setons lose much of their beneficial influence in the latter periods of their employment;—their good effects, as revulsives, being in an inverse ratio with the shortness of the period, during which they have been in action.

"The intensity of the artificial irritation, induced by a revulsive, is worthy of consideration, in a therapeutical point of view. If it be but trifling, it may be insufficient to break in upon the internal morbid catenation; and, on the other hand, if too violent, irritative irradiations may pass in various directions, and may even add to the internal mischief. Every practitioner must have occasionally witnessed an aggravation of symptoms from this cause, especially in those whose nerves are unusually impressible. In such, no variety of epispastic can, at times, be used. I have, at this time, under my care, a lady, who is thrown into the most violent nervous agitation, by the application of the smallest blister; and blisters have occasionally been known to induce convulsions. There are certain individuals, too, who suffer excessively from the vesication induced by cantharides, and yet, who are not—what would be called—extremely nervous. Their cutaneous nerves are, however, inordinately impressible. In such persons, vesicants would necessarily fail in their effects—by the general disorder, which would follow the high degree of erethism of the

dermoid structure. In such individuals, blisters are never found to exert their salutiferous agency; on the contrary, the irritation, they produce, is reflected to every part of the economy, and too often the diseased action, for the removal of which they were applied, is, in this way, augmented. In like manner, where the powers of the system have been greatly reduced, and much nervous irritability has been developed, blisters are apt to produce mischief. Broussais has made this fact the foundation of one of his propositions,—restricting it, however, to cases of gastro-enteritis. 'Vesicatories,' he says, 'often augment gastro-enteritis, because the inflammation, which they produce, adds to that of the digestive mucous membrane, instead of producing revulsion; they do not, then, render the services expected from them, in that grade of these diseases, which is called "adynamic fever." '*

"The character, and period of the disease have much to do with the action of revellents. Every practitioner must have observed, that in the phlegmasiæ, when the disordered actions run inordinately high, but little effect is usually produced by revellents. I am not, however, prepared to say, that they invariably do harm. I had an opportunity of witnessing, for a long time, the practice of an individual, much engaged with the duties of his profession, who always had recourse to blisters, from the first onset of inflammatory affections, often not only with impunity, but with manifest advantage. Theoretically, it would seem, that if the manifestations are already largely exalted, any source of irritation ought to add to such exaltation; the principle, however, that two irritations do not easily exist, at the same time, in the body, to the like intensity, applies even here; and, I can say, from extensive observation, that although the beneficial agency of revellents is not as marked as where remedies have been premised to allay the tumult in some measure, they have not always appeared to me to aggravate the disease, and have often been followed by a mitigation of the morbid action. I cannot, therefore, subscribe to the opinion, that 'in very strong subjects affected with intense irritations, accompanied with considerable febrile excitement, and having their seat in viscera important to life, or propagated to large surfaces, revulsion is next to impossible, and cannot even be attempted without danger.'† The danger does not appear to me to rest so much on the employment of the revulsives, as on the neglect of more effective measures, which such cases imperiously demand."

The recommendation contained in the following extract is new to us. Its value must be settled by experience.

"In the case which I before offered—of encephalitis liable to be augmented by epispastics applied to the shaved scalp, we rarely observe, in American or British practice, the revulsive applied at a greater distance than to the nape of the neck. There is no reason, however, why this part should be preferred to the top of the sternum,—where I am in the constant habit of applying it in such cases, and, as I conceive, with full advantage, whilst there is an overwhelming objection to the former situation,—in the circumstance of its rendering the position on the back uncomfortable, and, at times, impracticable, owing to the abraded surface being subjected to attrition on every change of position of the head. Practitioners have been so little in the habit of reflecting on the mode in which epispastics produce their salutary agency, in these cases, that they rarely select a more convenient, and yet equally effective, centre of irritation, at a greater distance from the seat of the mischief. Many of the French writers recommend blisters to be placed upon the arm, or between the shoulders, in encephalitis; but it has always appeared to me, that the top of the sternum is perhaps the least objectionable situation, where counter-irritants are demanded in head affections, accompanied by exaltation of the organic actions."

* Prop. 288. † Begin, Op. citat. p. 747.

The whole section from which these selections are made is above the average standard of the work of which it forms a part. It is less incumbered with faulty pathology and fanciful explanations, and is marked throughout by the better spirit of cautious observation.

Omitting any notice of the section on antispasmodics, we come next to the chapter on sedatives. Dr. Dunglison very properly, we think, admits without any hesitation the existence of "agents that directly depress the vital forces." Among these he places hydrocyanic acid, hydrosulphuric acid, sulphuretted hydrogen, some other of the gases, and tobacco. This list might probably be considerably extended. In this chapter our author enters somewhat largely into a general discussion of the uses and abuses of blood-letting. Many of his remarks on these important topics are characterized by much good sense and discretion. Dr. Dunglison is a cautious, discriminating bleeder; the disciples of Bouillaud in Paris and the pupils of the Sangrado, Gallup school in New England, would call him a timid and temporizing one. We give below some of his views and opinions, leaving our readers to choose, on such evidence as their reading and experience may furnish them, between the moderate and careful practice of our author and that of the more fearless and ultra advocates of the lancet.

After having spoken of a case where symptoms of acute cerebral inflammation occurred in an irritable and nervous female, Dr. D. says:

"I am satisfied, that had depletion been carried to a greater extent in this case—as it would most certainly have been, by those practitioners, who believe that general blood-letting is the only agent, that can be relied on as an antiphlogistic, great mischief would have resulted. Long, indeed, before Dr. Marshall Hall had published his interesting 'Researches on the effects of loss of blood,' I had been deeply impressed with what appeared to me the faulty views, entertained, both as regards the pathology and the therapeutics of such cases as those I have mentioned; and had satisfied myself, that the maxim inculcated by many practitioners as applicable to internal inflammations in general—'when you have bled in inflammation to such an extent, that you are doubtful, owing to the persistence of the symptoms, whether you should bleed again,—bleed,'—was a faulty one, and often, I fear, attended with disastrous consequences. As a general rule, I would say, on such occasions of doubt and difficulty, 'do not bleed, but have recourse to some other appropriate sedative, or revulsive agent, until your doubt is removed.' Every practitioner, much engaged with the diseases of women, must have met with cases of peritoneal inflammation in the puerperal state, in which, after bleeding has been practised as far as he has esteemed it safe, the effects of a sedative dose of opium have been signally salutary. The irritability of the nervous system has been allayed by it; whilst, if the bleeding had been repeated, it might have been formidably developed."

After quoting from Gooch, Dr. Marshall Hall and Abercrombie, their accounts of a morbid condition of the brain, occurring most commonly in children, where most of the usual symptoms of cerebral inflammation or congestion seem to be dependent upon an opposite pathological state of this organ, Dr. D. goes on to say:

"I have cited the above remarks at some length, in consequence of their marked accordance with the views I have been led to entertain in what have appeared to me to be similar pathological conditions; and I am satisfied, that

both in children and adults, we often meet with an analogous state of the brain, and especially in scarlatina. In the disturbed state of the encephalic functions, which so often attends that anomalous disease, we recognise—it has appeared to me—a condition very different from that, which is produced by active inflammation or congestion in the encephalon. Under the great expenditure of nervous energy, which takes place over the whole of the capillary surface, and which is indicated by the inordinate activity of the agents of calorification, of which the organic nerves distributed to the capillary blood-vessels are the most important, the great encephalo-spinal centre appears at times to be in a state very different from that of inflammation or active congestion. It is rather exhausted by the unwonted energy of the organic portion of the nervous system; and, accordingly, in many such cases, the use of diffusable excitants has been found serviceable,—the delirium or the coma gradually disappearing as the system begins to feel their compensating influence. This practice has been adopted in scarlatina, when accompanied by such signs of encephalic disorder, with great success, by my friend, Dr. Baer, of Baltimore, and it has been followed by the most happy results in one or two cases, which fell under my own care. Under the vigorous use of depletives, the symptoms have not been mitigated; at times, indeed, they have seemed to be aggravated; but on changing the system of treatment, and having recourse to tonics or excitants, a marked amelioration has speedily ensued."

In regard to blood-letting in the convulsions of children, our author makes the following remarks:

"Prior to the period of the first dentition, owing to certain evolutions of organs, the nervous system is, as we have previously seen, unusually impressible, so that sources of intense irritation, existing any where, may be the occasion of irritative irradiations proceeding in all directions, until the parts of the cerebro-spinal axis have their functions deranged, and sensation, volition, and mental and moral manifestations become, for the time, suspended. In this manner, the irritation produced by the pressure of a tooth against the gum, or any source of excitation in the intestinal canal may become the cause of convulsions; and, after the functions of the cerebro-spinal axis have been once so far deranged as they are during convulsions, they are extremely prone to reassume the morbid condition, until, ultimately, organic disease of the encephalon occurs, or the little sufferer is worn out by continued irritation. Now, in such a case, the predisposition to the disease is—the period of life; and the exciting cause is—the irritation in the alimentary tube. Great mobility of the nervous system—great impressibility—is present even in health, and this impressibility only requires the application of a sufficient exciting cause to have convulsions developed.

"In addition to this general predisposition, derived from time of life, there is doubtless an organization, obtained from progenitors, which predisposes to convulsions. We frequently see a whole family subject to them, during childhood; and, on inquiry, we may find, that one of the parents was liable to the disease in his childhood. In such cases, a less energetic exciting cause, is required to develope the mischief, possessing, as they do, a double source of predisposition. In the cases which I am now describing, we cannot invoke polyæmia, or hyperæmia of the encephalon. They are wholly neuropathic. The predisposition is unusual nervous impressibility; the exciting cause is often situated in the digestive tube; and very frequently the irritation there is produced by food of an improper character, or by some inflammatory or other morbid condition of the mucous or lining membrane. The indication cannot, consequently, consist in diminishing the quantity of blood circulating in the system, with the view of removing any supposititious congestion of the brain. Blood-letting, indeed, in such a state, could hardly fail to add to the mobility and impressibility of

the nervous system, and it has appeared to me, in many cases, to have been followed, too manifestly, by augmentation of the symptoms. The convulsions have recurred; the surface has become cool, and pale,—almost exanguious; the circulatory forces have exhibited, that their action was enfeebled; the little sufferer has continued in a state of coma between the fits, or has had but short intervals of consciousness; and he has gradually sunk with no signs of hyperæmia,—unless we consider the convulsions and the coma to indicate such a condition—for, on dissection, no morbid appearances whatever have been met with in the brain, or that effusion of serum has been discoverable, which, as I have before shewn, is present, when we bleed an animal—and a healthy animal—to death.

"Proceeding on those pathological principles, I have not often considered it proper to abstract blood in the convulsions of infancy; in almost all cases, it has been but necessary to clear the alimentary tube by a gentle emetic, followed by a mild cathartic; to keep the child from every source of irritation, that could act injuriously on his organs of sensation from without, or on the intestinal mucous membrane from within; to equalize, as far as practicable, the excitability of the cutaneous surface by the use of friction or of the warm bath; and, under this plan of management, I have almost always found the affection eventuate favourably. At the same time, it is proper to remark, that there are cases of convulsions accompanied by every sign of vascular excitement, and where a true polyæmic or hyperæmic condition of the brain exists. Here, of course, blood-letting is the main agent to be relied on. If encephalitis be present, it must be treated as encephalitis; but, in all cases, the most careful attention must be paid to discriminate, whether the convulsions are accompanied or produced by a redundancy, or by a deficiency of nervous and vascular energy."

Dr. Dunglison's cautiousness on this important point of therapeutics is very manifest in the following extract:

"The extent to which blood-letting should be carried, in cases of violent internal inflammation, is often a matter of great difficulty with the discriminating, but of no difficulty whatever with the reckless and uninformed. In his state of blissful ignorance, the latter continues to bleed, and consoles himself, when the fatal result has been hastened—perhaps mainly induced—by his agency, that the sufferer has fallen a victim to an incurable malady. Many have laid down a rule, before referred to, that when we have pushed the blood-letting to such an extent, and so often, that we are in doubt whether the operation should be repeated, the decision should be in the affirmative. But, with the disposition, which prevails so generally,—and which prevailed, a few years ago, to a much greater extent than it does even at present,—to bleed without due consideration, such a doubt will rarely be felt, without good ground at the same time existing for staying the hand; and, therefore, the decision, according to my experience, ought generally, as I before said, to be in the negative. The argument commonly urged for the farther abstraction of blood is, that the inflammation manifestly persists, and that it must inevitably destroy if not arrested;—that blood-letting is more likely to subdue it than any other therapeutical agent; and that if it should not, the physician will have the consolation of knowing, that he has done every thing in his power to avert the melancholy termination. Were the abstraction of blood, in all cases and to any extent, devoid of danger, this mode of viewing the subject might be logical; but mischiefs result from bleeding, in these and similar cases, which are fairly referable to the operation, and are equally serious in their results with the disease for which it may have been employed."

We do not think our author's anecdotes and illustrations, historical

and poetical, always the most near-fetched and opportune, but the following appears to us worth at least the small space that it will occupy and the little time required to read it.

"The satisfaction, often felt at the exhibition of energy on the part of the practitioner, is well exemplified by an anecdote, which an illustrious native of this country—now no more—who had filled the highest office in the gift of a free people, and whom I had the honour of ranking amongst my personal friends—was in the habit of recounting.

"Travelling from Virginia towards the north, he rested for the night at a tavern on the road; soon after his arrival at which, the hostess came in from a neighbouring house, with the females of her family,—all exhibiting marks of deep distress. He was informed that they had been witnessing the parting scene of a young friend, who had died of some acute affection. 'But, thank God!' observed the contented matron, 'every thing was done for him that was possible, for *he was bled seven-and-twenty times.*' 'It is not'—says the inimitable Molière, who was unsparing in his appropriate philippics against the profession, and the public of his day—'it is not, that, after all, your daughter may not die; but, at all events, you will have done something and you will have the consolation, that she died according to form.' "*

There are many other portions of this valuable chapter which it would gratify us to copy, but the extent to which we have already carried our extracts, and the length also which our notice is attaining, both admonish us to desist. We shall finish our quotations, therefore, with the following observations relating to the application of leeches to young children. We presume that there are few of our readers, who have resorted much to this very valuable means of treating inflammatory disease in young subjects, who have not been summoned, more than once, to their little patients, cold, panting and waxen-hued from the loss of blood by two or three leech bites.

"It has fallen to my lot to witness some alarming cases of exhaustion, especially in children, where leeches have been applied: in two cases indeed the result was fatal. In both the cases due attention had not been paid, and a large amount of blood was lost before the cause of the sinking was discovered; and in one of them every attempt to arrest the flow of blood failed. These cases are rare, but they constitute objections to the use of leeches which do not apply to cupping,—the flow from the wounds made by the scarificator being readily arrested. When practicable, the leeches should be placed over bone, in order that pressure may be conveniently made on the bleeding vessels, should such a course be requisite.

" 'When leeches are applied to soft parts,'—says an author to whom I have often referred,—'for instance, to the abdomen, it is truly astonishing how much blood sometimes is detracted; particularly when a poultice is applied over the bites, and the patient is kept warm in bed: to prevent, therefore, injurious symptoms of exhaustion from such a circumstance, the poultice should be frequently examined. This is more likely to occur in children than in adults; and in children it not unfrequently happens that the bleeding cannot be stopped without encircling the orifice with a ligature. On this account leeches should never be applied late at night on children; for, as the application of leeches in infancy must be regarded as a species of general blood-letting, the precise num-

* "Ce n'est pas qu'avec tout cela votre fille ne puisse mourir, mais au moins vous aurez fait quelque chose, et vous aurez la consolation, qu'elle sera morte dans les formes."—L'Amour Médecin, Act. i. Scene v.

ber which will regulate not only the quantity, but be equivalent to rapidity in the detraction of the blood should be determined; but the bites should be instantly closed, on observing that the system is brought under the influence of loss of blood.' "*

The remainder of the work treats of the following classes of medicines, to wit: narcotics, refrigerants, nauseants, antacids, antalkalies, antilithics, disinfectants, antiseptics, demulcents, diluents, and alteratives. The last chapter is one of "concluding observations;" and this, together with the volume, is terminated by some excellent passages from an excellent essay by Professor Bigelow of Boston—an essay as unlike in its spirit and character the work to which it is here appended as can well be imagined.

We have spoken of Dr. Dunglison's treatise with freedom: it is very probable that the author and his friends may think that we have spoken, in some instances, with undue license and unnecessary severity. We have not intended to do so. We belong to no party, medico-doctrinal or medico-geographical; we have no personal interests, prejudices or passions, to be in any way affected, or that can in any degree have influenced our feelings or our language. We have said what the interests of truth, science and humanity seemed to us to require, and no more. We are advocates for free discussion, in its best and fullest sense; but we believe that no discussion can be truly free which is not also courteous in manner, and as kind in spirit as the circumstances will allow. We believe the doctrines we have controverted to be dangerous and erroneous, but we distrust with too much sincerity our own opinions, as well as those of other men, to claim for them any exemption from fallibility. We ask for them only that fair hearing and attention which the deliberately formed opinions of any earnest lover of science and humanity may always reasonably claim.

E. B.

ART. XII. *A Treatise on the Malformation, Injuries and Diseases of the Rectum and Anus.* By GEORGE BUSHE, M. D., &c. New York: French & Adlard, 1837. 1 vol. 12mo., pp. 299, with nine quarto plates.

The author of this little treatise has been cut off in the midst of his labours since the completion of the work; the lights of his experience and reflections will never again be thrown before the public, and one of the chief purposes of a critical review, the correction of the peculiar faults of an author, is no longer capable of fulfilment. It only remains for us to notice the claims of the essay upon the attention of the profession.

The range of subjects discussed by Dr. Bushe, is nearly as exten-

* Thomson, op. cit. i. p. 458.

sive as that contained in the principal treatises previously published in our language, but we remark some few omissions in the list, evidently arising from a neglect of the labours of American anatomists and surgeons. These will be mentioned as we proceed.

The history and symptomatology of the various diseases, seem to be more generally compiled from books than we should have expected, when recollecting the fact that the author was one of the most extensive practitioners in the most populous city of the union; and it is chiefly in the addition of a few illustrative cases, occurring under his immediate observation, that the novelty of the work consists. The therapeutical directions are given in a manner rather objectionable on the score of dogmatism, as they consist, for the most part, of a mere enumeration of some of the plans of others, with an announcement of the methods preferred by the author, unaccompanied by all the argument desirable for those who would wish to form independent conclusions.

It has been, perhaps, a fault with some of our more recent reporters of cases to carry a little too far their attention to details not strictly relevant, after the fashion of some French pathologists; but, in the work before us, the author has unfortunately coupled a share of this failing with the worse error until lately prevalent on the other side of the channel. He has neglected many points necessary to the clear comprehension of the cases. It is a matter of no importance to the profession to know where and how the surgeon is occupied when called to a case, but when the application of caustic to a delicate part is directed, it becomes a matter of much moment to ascertain whether the nitrate of silver, the hydrate of potassa, or the chloride of antimony be the kind of caustic indicated.

With the statement of these general impressions, resulting from the first perusal of the work under notice, we will proceed to the examination of its separate chapters.

The details connected with the anatomy of the rectum are tolerably full, but it is evident that the writer had not studied with attention the mutual relations of the two sphincters, together with the direction and attachments of the longitudinal fibres of the intestine. In a note at page 12, he extracts the description of the duplicature and reversion of the longitudinal fibres beneath the edge of the internal sphincter, given by Professor Horner in his Special Anatomy; quoting the edition of 1826. He then remarks—

"As I have had no opportunity, since I read the above in Mr. H.'s treatise, of examining the rectum post-mortem, I am, of course, unwilling to admit his description into my text; yet as this gentleman's opinion is entitled to every attention, I have thought proper to insert it in the form of a note, so that others may ascertain whether it be correct."

It is to be regretted that the American Cyclopedia of Practical Medicine and Surgery, published in a neighbouring city, did not fall into the hands of the author before the publication of his work, as he would there have found, under the head of Anus, a much more full and perfect account of the course and character of the longitudinal

fibres of the rectum, as demonstrated by Dr. Horner. He would also have found an analysis of the relations between these fibres and the columns of the rectum, the pouches uncertainly and imperfectly described by Rives, and certain other parts occupying the interspace between the two sphincters of the rectum, all which points have important bearings on the pathology of the rectum and anus.

Dr. Bushe opposes the doctrine of Mr. Houston of Dublin in relation to the mucous folds, supposed by that author to be regularly disposed in a kind of spiral line throughout the rectum. Speaking of the mucous coat, he observes—

"Superiorly, it is smooth, and when empty, in consequence of its great amplitude, it is thrown into oblique and transverse folds, which, however, do not assume any regular form or arrangement."

And again, in a note on the valvular arrangement described by Mr. Houston—

"With all due deference I would beg leave to remark, that his misapprehension of this piece of anatomy has arisen from his methods of investigation:—one, by filling the intestine with alcohol, and then opening it; the other by inflation and drying. In the first, the accidental folds are rendered permanent by the induration resulting from the action of the alcohol; while, in the second, the projections resembling valves are produced by the angles formed by the settling of the intestine during the process of desiccation."—p. 13.

Now, although the existence, even occasionally, of proper valves, with muscular fibres, such as are described by Hutchinson, has been rendered extremely improbable by the investigations of recent anatomists, the existence of occasional wide and permanent duplications of mucous membrane dividing the rectum into cells, *but not provided with muscular fibres*, has been placed beyond a doubt by the preparations in the Wistar Museum, deposited by Dr. Horner.

As we have already described this arrangement on several occasions, (see review of O'Beirne on Defecation, in this Journal, for August, 1836,) it is unnecessary to repeat the details here.

With regard to the semi-lunar valves or sacculi of the anus which have led to so much discussion—having been supposed to be obscurely figured forth as accidental occurrences by Glisson and Ruysch, rather more distinctly by Winslow, identified after years of search by Ribes, and proved to be a normal and constant structure by Horner—Dr. Bushe expresses great surprise that anatomists should have experienced any difficulty in finding them. He says: "For my part I have been always able, in my lectures and dissections, to verify the concise description of Winslow," &c.—p. 15. But the description of Winslow is so concise that it shares in the obscurity which overshadows the notices of all the authors anterior to Ribes, and is not entirely dispelled from the latter. We are left, then, still in doubt, whether the semi-lunar valves so continually demonstrated by Dr. Bushe were the true sacculi of the anus described in the article to which reference has been already made, or merely follicles, or accidental transverse mucous folds in the grooves between the columns of the rectum.

The want of attention to the observations alluded to, based as they

are upon the dissections of the most profound anatomist on this side the Atlantic, has prevented Dr. Bushe from arriving at some important conclusions connected with the history of prolapsus and accidents of the rectum.

The enlargement of the anus in the interspace between the two sphincters is not described; consequently the history of the causes and progress of fistula in ano is rendered less complete and philosophical. The author does not seem to have been at all acquainted with the preternatural pouches of this region, as observed by Dr. Physick; or if familiar with them, he has classed them with internal fistula, and has neither noticed the peculiar symptoms following the accidental introduction of small portions of feces in these pouches, nor the operation required for their cure. (Amer. Cyclop. of Pract. Med. and Surg., Vol. II., p. 123.)

The second chapter, treating of the functions of the rectum, is too short to be very satisfactory, and displays in a strong light the defects consequent upon the neglect of many important points in the anatomy of the region. The peculiar notions of Dr. O'Beirne on defecation are combated at great length; but as we have already discussed this question in a former number, it is unnecessary to comment upon it here.

The subject of malformations of the rectum is next introduced; and although the history of the varieties of imperforations of the anus and rectum is rather slightingly passed over, the accompanying notes furnish some interesting bibliographical references creditable to the research of the author.

The list of foreign bodies in the rectum, which follows in order, is curious and considerable. It seems, indeed, that nearly all the apparatus of the table as well as their contents, excepting the table itself and the larger dishes, have occasionally found their way to this receptacle. Knives, forks of wood and iron, cups, bottles, jelly pots, jaw bones of dogs, and pigs' tails with the bristles, are among the number! A tolerable idea of the variety of these foreign substances may be formed by perusing the following catalogue.

"The instruments necessary for extracting these bodies are blunt hooks, of different sizes and shapes, a lever," (quere, of what dimensions?) "gimlet, cutting forceps, strong long scissors with probe points, a six inch narrow saw, wooden gergeret, polypus and lithotomy forceps of different shapes and sizes, a speculum, strong waxed ligatures, metallic tubes of various length and size, and a probe-pointed bistoury; to all of which, the crooked finger and a small hand are admirable adjuncts."—p. 58–59.

A tyro in the profession might well be alarmed at this terrible array; and it may be well to observe that the extraction of foreign bodies from the rectum, though the operation requires some anatomical knowledge and often considerable caution, is, in most instances, a very simple business. It excites the fears of the patient and the disgust of the surgeon; but the only instrument not contained in the common pocket case required in any but the rarest accidents, is a short forceps, on the principle of the œsophageal instrument invented by Dr. Bond of this city, which facilitates the extraction of all long, slender,

and pointed bodies from narrow canals. In those very unusual cases in which tea cups, jaw bones, glass bottles, &c., have been found in the rectum, the circumstances of each individual accident will determine any intelligent surgeon in the choice of tools for extraction better than will the record of the modus operandi in former instances.

It is unreasonable to add to the list of apparatus for rectal operations *a six inch saw*, merely because a madman once chose to make a suppository of a long forked stick; for if a similar instance of monomania should recur within the next century, the nearest watch-maker's shop will supply the deficiency.—(p. 63.) As for cases like that narrated by Marchetti, which has been harped upon *usque ad nauseam*, more to the detriment of morals than to the benefit of surgery, the expedient of the canula should suggest itself to any tyro in the art.—(p. 64.)

The principal original notice in this chapter is a case of the extraction, without dividing the sphincter, of a rectal concretion, six inches and three-quarters in circumference and two and a half in length. The patient was a delicate female, thirty-five years of age, who had laboured under constipation and colic for seven years. Her bowels were moved with great difficulty by the aid of powerful enemata and cathartics during the attacks.

"I was called to visit her in one of these paroxysms, and found her sallow, emaciated and dejected. From severe bearing-down pains, together with the weight and fulness in the sacral region, which she complains of, I was led to make an examination of the rectum, when I found the mucous membrane slightly protruding from the anus, and very turgid, the sphincter excessively irritable, and a large concretion distending the pouch of the rectum. I now apprised her of the nature of the case, and the absolute necessity of removing the foreign body, to which she willingly consented. Having placed her hips over the edge of a bed, and bent her knees toward her chin, while she lay on her back, I introduced a strong and long lithotomy forceps, with which cautiously laying hold of the concretion, I slowly and steadily extracted it, with no more injury than slight laceration of the mucous membrane."—p. 60.

In this instance, the foreign body, together with the forceps, for which due allowance must be made, will measure two and a half inches in diameter, and this may be considered about the limit of the dimensions of a smooth body, which may be extracted from the pouch of the rectum without the aid of incisions or the danger of any very serious injury from distension.

It is mentioned that leeches, when applied to the anus, may make their way into the rectum, and an injection of an infusion of tobacco or a solution of salt is recommended for their expulsion. Zacutus Lusitanus is quoted as recommending injections of onion juice, ox gall, or castor for similar purposes.—p. 66. We should much prefer the very obvious practice which consists in preventing the leeches from entering, for it is only through very gross negligence that such an accident can occur! But suppose a leech to have made a lodgement in the rectum, there can be no sufficient reason for rendering him more uncomfortable than his own wayward will must make him! The medicinal leech is an animal far too delicate long to tolerate such

disagreeable lodgings! He will neither adhere to a dirty surface, nor tolerate acridity or fetor; and if the mucous membrane should happen to be unusually clean, he would very soon experience the pleasures of repletion and pass off unconsciously with the first discharges, in the midst of his after-dinner nap! The cases requiring the application of leeches are precisely those in which the introduction of glyster pipes and stimulating enemata are most injurious, and we cannot perceive the slightest propriety in their employment.

While upon this subject, it may be well to express our fears for the use of the large European leeches in parts so delicate and irritable as those around the anus. The more diminutive American kind is far better adapted for the purpose.

The lacerations of the rectum which are next introduced by Dr. Bushe, are divided into the incomplete and the complete lacerations. The former are for the most part ruptures of the mucous membrane from the passage of hardened feces, or from the introduction of foreign bodies: the rents being either longitudinal in the anal canal, or transverse at the upper margin of the internal sphincter. Three cases are narrated, in one of which, a longitudinal rupture of six weeks standing soon yielded to confinement in the horizontal position, lavements, ablutions and narcotized saturnine poultices; in another, a crevice of five days standing, with tumid edges, and complicated with spasm of the sphincter, did not yield to similar treatment until "a cane of caustic" (nitrate of silver?) was passed thrice over the lacerated surface: in a third, a transverse laceration at the upper edge of the sphincter required the free division of that muscle before it could be cured.

The complete lacerations are divided into three species, according to the nature and extent of the parts interested. There are much confusion, and some apparent contradiction in the few pages devoted to this subject; and the discussion is almost restricted to the consideration of laceration occurring during labour. To sum up the subject in a few words, Dr. Bushe finds a very large majority of these lacerations confined to the integuments together with the mucous membrane and the external muscle, and caused, generally, by the preternatural elongation of the perineum: sometimes, the recto-vaginal partition is ruptured above the sphincter; and, very rarely, this partition, together with the perineum, is completely torn asunder. In the case of one lady, Dr. B. thinks that he very narrowly escaped observing what Dupuytren terms *la déchirure centrale du périnée.*

"I found the perineum much elongated, the orifice of the vagina very narrow and close to the pubis, and the head of the child pressing forcibly downward. When the pain, which was violent, subsided, and the head retreated, I introduced my finger, and to my discomfiture, found a rent at least four inches in length, extending transversely through the posterior part of the vagina, about an inch and a half from the vulva. I now inserted my finger into this laceration, and distinctly felt the lower extremity of the rectum firmly contracted. Another pain soon came on, which fortunately was not very strong, so that I was able to support the child's head while I had a probe-pointed bistoury taken from my pocket case, and when the pain ceased, I divided the perineum obliquely downward and outward on both sides, to an extent sufficient to allow

of the delivery without further laceration. In this case, I have no doubt had I been a little later, there would have been perforation of the perineum."—p. 76.

We do not observe much originality in the practical directions for the management of these lacerations, if we except the introduction of some modifications of the needle in making the sutures. In the milder form of external laceration of the perineum, Dr. B. employed a kind of semicircular silver hare-lip needle, armed with a moveable steel point at one end, and a fixed silver shoulder at the other. The needle being introduced, and the point unscrewed, a moveable silver shoulder was substituted for it, and a ligature was then applied in the usual manner of the twisted suture.

A case is narrated in which a rent of five months standing was cured by means of two of these sutures, after the excision of the cicatrized edges.—p. 83.

We will close our notice of this chapter after extracting a more remarkable case.

"When the recto-vaginal partition, sphincter and perineum are torn through, the case assumes a very serious aspect. I have never seen but one of this character, and that was in the person of Mrs. D. who, in 1828, had a dreadful accouchement. Thirteen months after this, when the surfaces of the wound had healed separately, and all the parts were puckered, turned, and partly excoriated, after having removed as far as possible the existing irritation, I performed the following operation. Having placed her as in the operation for stone, I excised the edges of the wound on a wooden gorgeret, and passed two sutures, each half an inch apart, through either lip of the recto-vaginal septum, and then tied them in the vagina. Finally, I inserted one of the perineal pins as described in pages 82–3. The sutures and pin were removed on the eighth day, when all the parts appeared firmly united. I may say that I experienced no difficulty in passing the sutures, which I attribute to the employment of small curved needles.—(See plate viii. fig. vii.) and the *pince port-aiguille* of Dieffenbach."—p. 85.

The three next chapters on inflammation of the rectum, inflammation and excoriation of the anus, and inflammation of the rectum and anus arising from the application of gonorrheal matter, are comprised in less than seven pages, heavily leaded and with ample margins; it is hardly necessary, therefore, to apologize for passing their contents unnoticed.

Fissure of the anus seems to have been observed more frequently by Dr. Bushe than by most American surgeons. There are two points only, in the treatment, which appear to us particularly worthy of notice. First, the employment, (in some cases of superficial fissures attended with spasm, after the application of nitrate of silver,) of an extract of belladonna and spermaceti, in the proportion of one part of the former to seven of the latter. This ointment, differing only in its proportions from that previously recommended by Dr. Laporte, (see this Journal, Vol. VII., p. 250,) is stated to have been more successful than that employed by Dupuytren, and which was composed of belladonna, acetate of lead and lard. Secondly, the application of ice to one case of fissure, in which caustic had produced intense pain, not relieved by morphine. The ice relieved the pain of the paroxysms, and the ointment of acetate of lead, emollient enemata, low diet and the horizontal position, completed the cure.—p. 105.

Four cases are narrated at the close of the chapter; one speedily cured by emollients, acetate of lead, diet, ablutions, and lavements; another by the same measures, combined with emollient enemata and cauterization with nitrate of silver; and two by free division of the sphincters. The details of these cases are less minute than the pathologist would desire.

Passing over the tenth and eleventh chapters, on neuralgia of the rectum and spasmodic contraction of the sphincter ani, which are rendered unsatisfactory by defects of system and diagnosis, we come to ulcers of the rectum, such as are produced by inflammation and the entanglement of feces in the lacunæ. Some rather interesting cases are mentioned. They were treated in the manner generally employed in similar ulceration in other parts, except that in several instances the sphincters were divided laterally through the ulcerations. The author states that he had seen one case of death from many and small ulcers of the rectum. The patient had been treated in India for dysentery, but, on examination after death, the colon appeared healthy.

After a single page on venereal ulceration of the rectum, our author takes up the subject of hemorrhoidal affections. In the remarks on the hemorrhoidal flux there is nothing to arrest attention.

Dr. B. appears not to agree either with those who believe in the varicose origin of internal hemorrhoidal tumours, or with those who consider these enlargements as erectile cavities caused by extravasation; he regards them rather as proper tumours of a highly vascular kind.

"I have frequently dissected them with the greatest care, and found that they were spongy, reddish, and contained both arteries and veins, the latter being the most capacious, *but always perfectly healthy*.

"Their surface is villous, and generally bleeds when touched roughly or scratched with the nail; the blood which issues being of a florid red colour. In many instances I have been able to rub off exceedingly vascular and fragile adventitious membranes from their surface. Thus it would seem that they may acquire an increase of magnitude in this way."—p. 152.

In this description of the ordinary structure of internal hemorrhoidal tumours we perfectly coincide, but it is well known, and apparently acknowledged by Dr. B. (Chap. xv. p. 197,) that tumours consisting of mere venous enlargements are seen in the same situation with regular internal piles; and as many details with regard to treatment may be determined by this difference of structure, it is to be regretted that the diagnosis of these affections is not drawn with sufficient accuracy, and that the two figures in the third plate, which are intended as illustrations of the distinction, possess but very little character. Scarcely any allusion is made to those extensive varicosities which sometimes occupy a large portion of the parietes of the rectum, and are generally mistaken for hemorrhoides.

In speaking of external piles, our author seems to have lost sight of the fact that, like those which are internal, they are sometimes varicose, sometimes strictly erectile, and sometimes due to extravasation.

"They are more or less livid, generally elastic, have an extensive base, and

are formed of extravasated blood, which is encysted by condensed cellular tissue, and covered by a few fibres of the sphincter and firm skin of the verge of the anus. * * * Sometimes the blood is absorbed, leaving no trace behind; occasionally, however, in consequence of the first, but more especially of repeated attacks, the superincumbent integuments and surrounding cellular tissue become hypertrophied, and pendulous flaps or tumours, which, in some instances, from the friction they are exposed to, obtain a rough or warty aspect, and become a source of great irritation. It not unfrequently happens, that when there is but one large tumour, it suppurates, and then gradually shrinks up."—p. 163.

Here we observe a description of only one form of external pile, analogous in cause with the preternatural pouches of Dr. Physick, but different in position and result. The latter are confined to the middle region of the anus; they open usually by a single small orifice, and instead of forming abscesses, remain in an indolent condition as torpid sacs unless occupied with foreign matters, in which case they produce terrible uneasiness, but shew little disposition to unite by inflammation or to terminate in fistula. They are scarcely curable except by the complete excision of their thin internal walls. The former, on the contrary, originate in and are chiefly confined to the lower region of the anus, are disposed to open by several orifices, often terminate in occult or complete fistula, readily become inflamed, and unite when freely opened and completely evacuated. See American Cyclop. of Pract. Med. and Surg., art. *Anus*.

We do not like the division of hemorrhoids into the internal and the external—it is too artificial; and whenever an external tumour of the varicose or strictly erectile character is observed, we are almost sure to find the disease extending throughout the whole canal of the anus. This should be borne in mind in selecting the proper mode of operating in each case.

After dwelling at considerable length on the causes of hemorrhoidal affections, and their general treatment, the author passes to the subject of operations. His dread of hemorrhage from rectal operations,—the result of experience,—appears to have been considerable, and he is a strong advocate for the ligature in preference to the knife. Some of the more important objections alleged against the former, are combated with candour, but we are struck with that want of analytical acumen in determining the precise cases to which the one or the other mode of operating is applicable, which is observable in most writers on the diseases of the rectum and anus. It is now well known that accidental erectile structure bears the ligature well, when the parts are not materially diseased; and it is equally well known that varicosity of the veins endangers the occurrence of phlebitis under the application of ligatures. We have been long anxious to obtain authentic materials to warrant some rational conclusion as to the relative dangers of bleeding and inflammation in the two modes of extirpating anal tumours; but the work before us furnishes no such data. The pain of the ligature is one of the greatest objections to its use; but this pain is comparatively trivial, in most instances, when the entire grasp of the loup is above the lower margin of the internal

sphincter; when below that spot, it is terrible. This distinction is not drawn with sufficient emphasis by Dr. Bushe, and we think it was incumbent upon him, from his position, to have been aware of the beautiful method of Dr. Physick for avoiding the exquisite suffering attendant upon the ligature when it includes the whole of a tumour which is partly above and partly below the edge of the sphincter just mentioned. This plan consists in dividing with a scalpel the integuments round the base of so much of the tumour as is covered by the skin, leaving intact that which is invested with mucous membrane; the ligature being then applied in such a manner that it traverses the superficial incision without including any portion of the exquisitely sensitive skin. By this plan we have all the safety of the ligature with scarce the tythe of its painfulness when used in such cases according to the ordinary method.

This chapter contains descriptions of some novel modifications of instruments for seizing the tumours, for passing the ligatures, and for arresting the hemorrhage by means of pressure with an inflated intestine—(pp. 185–189, and pl. ix., figs. 1, 2, 3, 4, 11, 12.) We shall not pause to analyse these instruments, as none of them are novel in principle, and all will be better understood by a glance at the figures than by verbal description. They are ingenious, and probably convenient, but do not strike us as very necessary.

When a surgical operation becomes essential to the retention of an established prolapsus ani, Dr. Bushe recommends the plan advocated by Howship, Calvert, Mayo, &c., which consists in taking up by ligature, and then removing by the scissors one or more small portions of the mucous membrane in order to establish adhesions, after reduction, at each of the spots selected. We have stated our reasons for opposing this operation in an article to which we have already referred on more than one occasion, and do not deem it necessary to repeat them here. When the method of Howship (or Heavisides) does not succeed, our author advises the well known operation of Dupuytren, which consists in removing by the scissors a sufficient number of the longitudinal folds of the anus; but by a culpable feeling of nationality, he shows a disposition to rob the French surgeon of his merits in favour of his almost equally eminent countryman, Hey of Leeds, by confusing in the strangest manner the plans of both these operators, though they are obviously and widely different. The rude excision of the whole flap, by the latter, is as unsurgical as the beautiful process of the former is neat and appropriate. If precedence in the establishment of the principles involved in these operations be contested, the claim must be awarded to neither of these gentlemen, but to Cheselden, who removed a linear portion of the flap with "a caustic."—p. 209.

We find nothing demanding especial notice in the succeeding chapters on relaxation of the anus and rectum, pruritis, excrescences and polypi. They are all exceedingly short and imperfect. We might add to the list the much more considerable chapter on abscess, after censuring, as in duty bound, the very artificial nosological arrangement;

but it seems proper not to pass over without comment the practical directions contained in the following passage on what is termed acute gangrenous abscess."

"Should the skin and cellular tissue be destroyed, as described at page 234," (cases of extensive denudation of the rectum and sphincters) "the tonic course which we have now mentioned, ought to be continued until the health improves, when it will be necessary to perform an operation to remedy this state of disease; for the contraction of the sphincter, by separating the intestine from the walls of the pelvis, will render reparation impossible. The operation which I have performed in these cases consists in passing Dessault's wooden gorget into the anus, and then carrying the bistoury into the chasm, I divide the sphincters on it, to the verge of the anus. Should both sides be affected, I treat them in the same manner. I then pass a ligature through the angle of each flap, and plug the intestine with lint. Finally, I fasten the threads by means of adhesive plaster, to the buttocks. In this way the gut is prevented from retracting, while it is well pressed out towards the hips. In a few cases I have omitted the ligatures, but not without having had to regret it."—p. 243.

The anthracoid abscesses of the buttocks are circumscribed, and are not prone to denude the rectum. They probably never reach this intestine on both sides in the same case, and they are not, therefore, of a character to require the operation just described. The acute and chronic gangrenous abscesses of authors, beginning deep in the pelvis, are extremely rare; and a considerable number of the cases which have been observed, have been complicated with a false passage in the rectum; or, in other words, they have been stercoraceous and fistulary. It is needless to point out the reason why a division of the rectum from the internal orifice to the anus is adviseable in such cases.

The most common cause of extensive sloughing about the anus, is the diffuse inflammation of the cellular tissue described by Duncan, or what has been strangely called erysipelas phlegmonoides. This is not a very rare affection. It spares (as do probably the other species mentioned, in most instances,) the muscles, with their attachments, and the muscular coat of the rectum. The description of the affection in which Dr. Bushe operates in the manner above described, as given in pages 233 and 234, is obviously drawn from cases of this diffused inflammation. We are familiar with it, and in two instances have beheld much wider destruction of parts than occurred in the case selected by Dr. B. as an illustration: plate vi. fig. 3. We are compelled to believe the practice under notice calculated to enhance the difficulties of treatment. The power of reproduction, in places occupied with very rare cellular tissue, is almost as remarkable as the facility with which these parts are destroyed by gangrene; and when the integrity of the rectum is preserved, it does not appear reasonable to expect much difficulty in the reunion of gangrenous abscesses which have not been allowed to degenerate after a lapse of considerable time, by a neglect of proper treatment. The records of surgery do not furnish conclusive evidence of the existence of such difficulty, in the history of well observed and dependable cases; and in all the instances presented under our own observation, the reunion has been fully accomplished without the necessity of any incision. The peri-

neum has been much deformed by the contraction of the cicatrices; but as these tend not to contract, but rather to dilate, the anal passage, so long as the canal preserves its integrity, they do not appear calculated seriously to embarrass defecation. While the external sphincter retains its anterior and posterior connexions, the rectum cannot be retracted to an inconvenient extent, and such is the condition of this muscle in a vast majority of cases. The four simple gangrenous abscesses of the anus which we have met with, have all been cured, and well cured, without any instrumental aid other than free external incisions. So much for the *necessity* of the operation practiced by our author; but there are other direct objections against it. The lateral incision of the denuded sphincters at once destroys a portion of their power to antagonise the levators of the anus, and thus the disagreeable retraction of the rectum, alluded to by Dr. B., must occur, unless partially prevented by mechanical means. The ligatures employed for this purpose cannot answer their intention fully; for, if passed through the mucous membrane, they will rapidly ulcerate out, and if secured to parts beneath the margin of the internal sphincter, they will prove a source of dangerous irritation. When erysipelas, the most frequent cause of this kind of abscess, or when a gangrenous tendency is generally prevalent in hospitals or neighbourhoods, the application of either ligatures or adhesive strips, such as Dr. B. recommends, is found to be seriously objectionable, as such measures often *produce* the disease, and always *exacerbate* it. But the very principle upon which the propriety of dividing the sphincters is defended, is one totally at variance with the practice. The direct effect of the incision is to allow the anus to be drawn by muscular contraction toward that side, or toward those portions of the pelvis which are opposite to the cavity or cavities produced by the gangrene. There is no developement of the anal canal, but rather a contraction of its walls by the cut fibres of the sphincters, and the space required to be filled up by granulations is increased instead of being diminished. If any thing can be gained by stuffing the pouch of the rectum with lint, as directed by our author, (which we do not credit,) this manœuvre can be practiced quite as successfully without dividing the sphincters; and then it would be free from the obvious objection that the lint assists the muscles in forcing the anus out of its natural position, to which it can never be properly restored by the irregular contraction of the cicatrices. There are other, and still stronger arguments against this practice, but we will leave them to the penetration of the reader. The operation is a relic of the errors of a darker age; it was devised by Faget, and advocated in a paper in the memoirs of the old Royal Academy of Surgery, (tom. i. p. 289, edit. in 8vo., Paris, 1819;) a paper which has exerted a strange influence over the views of most succeeding surgeons, though it contains exceedingly little, either in the way of fact or argument, to entitle it to such respect. We protest then, against the division of the rectum or anus in abscess, unless when coupled with false passages into the intestine, or when the cavity

is of long standing, and its lining membrane has undergone the mucoid transformation which reduces it to the condition of a fistula.

The chapter on fistula is based chiefly on the paper of Mr. Ribes, but Dr. B. differs from that author on one point. He advocates the division of the external, and a part, or the whole, of the internal sphincter in some cases of incomplete fistula.—p. 252. We fully concur in the propriety of making a counter opening into the anus, in those incomplete fistula which detach a considerable portion of the mucous membrane from the muscular coat of the rectum, passing between the external sphincter and the integuments of the anus, and proving obstinate under other modes of treatment; but we have never seen, and should doubt the occurrence of, cases of incomplete fistula demanding a division of any considerable number of muscular fibres for the mere purpose of establishing a free communication between the fistula and the rectum.

In operations on fistula, Dr. B. steadily prefers the knife to the ligature; but, like Ribes, he directs that the incision should never be extended higher than the upper margin of the internal sphincter. He never met with an internal orifice situated above that line.

After a very short chapter on contraction of the anus, Dr. B. enters upon the subject of stricture of the rectum, which is treated rather more at length. This chapter will repay the reader with some notes of personal experience not altogether without value. It contains also a notice of a modification of Sir Charles Bell's ivory dilator, consisting of an elliptical ball of ebony mounted upon a long stalk of whalebone, which can be bent by the index finger while in the rectum, so as to bear directly upon a stricture in any part of its rout; an instrument greatly preferable to the bougie in many cases. A more complex metallic dilator on the principle of the expanding specula is described and figured. Dr. B. urges caution in its employment, but has reaped great advantage from it in some cases; we cannot pretend to express an opinion on its merits without the opportunity of examining, and perhaps testing models. Our author candidly states that he has never succeeded in curing stricture of the rectum.

"To be brief, I know of no patient who was able to leave off the use of the bougie for any time, without an increase or return of his complaint."—p. 287.

The work is concluded by a few remarks on the carcinomatous degenerations of the rectum, with a case in which the author extirpated a cancerous tumour involving the anal canal. The patient continued well for a few months, but died in the country seven months after the operation. Six or eight arteries were tied in this case, and the control over solid feces was not entirely lost.—p. 295. Several of the more important diseases and accidents mentioned in the work, are illustrated in seven coloured lithographs, and two other plates contain figures of the several instruments employed by Dr. Bushe. To be really valuable, figures of morbid parts require to be executed with great care, in order to exhibit the characteristics of the disease intended to be represented; those appended to the treatise before us are certainly not commendable for their fidelity.

The death of an author who has held an important position before the public, seems frequently to attach an undue, or at least, an increased weight to his opinions, and much as we feel disposed to deal kindly by the memory of the departed professor and very extensive practitioner whose labours have been canvassed, justice to the profession demands the statement that, as a record of personal experience, this work is meagre to a degree that is surprising when the opportunities of the writer are considered; and that, as a compilation, its details cannot be considered sufficiently ample to possess a very great degree of interest. R. C.

ART. XIII.—*Facts and Cases in Obstetric Medicine, with Observations on some of the most important Diseases incidental to Females.* By J. T. INGLEBY, Member of the Royal College of Surgeons, London; Senior Surgeon to the General Dispensary; Surgeon to the Magdalen Asylum; and Lecturer on Midwifery at the Royal School of Medicine, Birmingham. 8vo. pp. 296. London: Longman & Co.

It is gratifying to perceive that Obstetric Medicine is beginning to engage the attention of physicians to an extent corresponding with its great importance. Certainly no department of the healing art has been more neglected, even by those whose especial duty it was to cultivate and improve it. Within a few years, it is true, we have been furnished with several truly valuable treatises on the diseases peculiar to the female sex, calculated to supply, in some degree, the very great deficiency which had previously existed. The writings of Gardien, Capuron, and Duparcque among the French, and of Mansfield, Clarke, Gooch, Blundell, and some others among the English, and Dewees in this country, have introduced more correct views in regard to the causes and nature of the diseases of women, and discarded, in some measure, the empyrical means formerly too generally relied on for their cure. The field nevertheless is a broad one, and abundant space for cultivation remains in it still, for all such as may be disposed to toil for its fruits. An educated mind, trained to observation, and controlled by a proper regard for the opinions and experience of others, when associated with the industrious habits of such a writer as Mr. Ingleby, will never fail to excite a due degree of interest for any subject upon which its labours are employed. This particularly is true in reference to the work before us. The author, although not connected with any large hospital, gives proofs in the numerous cases which he cites, of extensive observation, derived from his private practice, and the large consultation business which a high character among his neighbouring practitioners has secured to him. In these respects, his experience is drawn from the same sources as that of Dewees. Such

opportunities are not of very common occurrence; while facts so derived, in our estimation, are greatly preferable to the conclusions drawn exclusively from hospital reports, not only from the admitted character and experience of the observer, contrasted with the youth and inexperience of those upon whom the labour of recording the histories of cases commonly devolves in public institutions, but also from the broken down constitutions and irregular habits of such as ordinarily resort to the wards of the latter; circumstances which it is well known often so mask and complicate diseases, and modify the effects of remedies, as to afford but dim lights for general guidance. The work, of which we have given the title above, is comprised in seven sections. The first three, and a portion of the sixth and seventh, have been published before, "but now appear in a revised and greatly enlarged form."

The *first section* is occupied with the consideration of *puerperal convulsions*. Certainly no subject of deeper importance occurs within the range of obstetric medicine. On this account, and to enable our readers to appreciate the author's views, we shall notice the prominent points connected with it, with less than our accustomed brevity.

"The term *puerperal convulsions*," the author thinks, "should be confined to cases occurring in paroxysms affecting the contractile tissues generally, and, in many respects, resembling epilepsy, although the attack cannot be regarded either as apoplectic, epileptic, or tetanic, but partaking more or less of the character of each of these diseases."

The circumstance of blood-letting proving so efficacious in puerperal convulsions, in the author's opinion,

"Militates strongly against its genuine epileptic character, for bleeding in common epilepsy is usually injurious; neither is the subject of puerperal convulsions left exposed to attacks of chronic epilepsy."

"The hysterical species, in its mode of attack, duration, degree, violence, and the perfect recovery of the patient on the subsidence of the fit," he remarks, "is so very different from eclampsia, that a man must want common sagacity to confound the one with the other. As for the apoplectic species, without sanguineous effusion, it is really a distinction without a material difference; it differs only in degree, and usually appears during labour."

The author unites with Dr. Blundell in attributing convulsions, "in most cases, to increased action of the cerebral vessels:" although he admits, with Andral, "that states of anæmia, as well as of hyperæmia, are equally productive of convulsions."

"Allowing, therefore, for complications and variations of constitutions, the more important convulsions of the puerperal state may be referred to two principal and opposite conditions of the system; either an excited or turgid state of the vessels of the brain (often promoted by improper diet, and a neglected state of the bowels during gestation) or by loss of blood, as after a dangerous hemorrhage. There is also a third state, subordinate to those just mentioned, and which seems more immediately dependent upon excessive sensibility of the uterine fibres, since it generally happens under an irregular and highly painful action of the uterus during its dilatation."

That the different "conditions of the system" pointed out by the author, do strongly predispose to convulsions, will be admitted by all who have had much experience in the management of parturient women: but it does not appear to us that the intelligent author has

clearly indicated the lesions, or organic changes which constitute the pathology of these "different conditions," nor, consequently, the discriminating signs by which they may be discerned. Without this knowledge we cannot hope to arrive at a rational and successful plan of treatment.

The following observation we doubt not will appear to our readers, as it does to us, extraordinary and unreasonable, viz:

"Not only does the attack usually occur in first pregnancies, but, what is remarkable, with very few exceptions, almost always when the presentation is natural. Where the presentation is preternatural, there is little cause (says Collins) to dread the attack."

That convulsions happen much more frequently during first than during subsequent labours, is consistent with reason and every day experience. The more violent and protracted efforts of the uterus necessary during a first labour to overcome the natural rigidity of the soft parts, with the anxious uncertainty usual in those who have never experienced such suffering, are alone sufficient to account for the more frequent occurrence of convulsions then than subsequently. But that a *preternatural presentation* should afford any immunity from such attacks, we cannot for a moment concede. Convulsions during pregnancy and labour, are not of very frequent occurrence; neither are preternatural presentations; and the concurrence of the *two unusual circumstances* in the same case, is likely to be rare indeed. But as the labour is certainly rendered more difficult in preternatural presentations, the danger of convulsions and every other bad consequence must be proportionally increased. In fact, the author admits this position when he afterward says that "convulsions which arise after the os uteri has acquired a moderate degree of dilatation, may sometimes be traced to malformation either of the pelvis or head of the infant." Now such malformations do not predispose to the attack of convulsions, excepting so far as they increase the duration and intensity of the uterine efforts.

Entertaining the opinion we have quoted, that puerperal convulsions are to be attributed to "increased action of the cerebral vessels," the author advocates blood-letting both as a preventive and curative means. "Even under a strong predisposition to convulsions," he remarks, "the attack may generally be prevented by bleeding, daily laxatives, a simple diet, and mental quietude." Whenever the face and extremities become œdematous in the latter months of pregnancy, or

"Whenever a woman has been the subject of puerperal convulsions, the necessity for adopting these precautions in a subsequent pregnancy, especially towards its termination, and for maintaining tranquillity of the circulation, must be obvious. Generally, however, as depletion is now practiced, its efficacy in removing the paroxysms and permitting gestation to proceed, is either not acknowledged, or not estimated according to its high and practical importance."

After the high authority of Hamilton, Denman, Dewees and others, in favour of copious bleeding, adduced by the author himself, we cannot admit that the efficacy of the remedy "is either not acknowledged or not estimated according to its high and practical importance."

The natural inference from the remark would seem to be, that *he* bleeds with an unsparing hand. Like some others of equally high pretensions, it is to be feared that in this respect he is an ultra advocate for a remedy which is certainly not less potent for evil than for good.

Reposing the highest confidence in its value, in vigorous constitutions, or in those not already greatly debilitated by sedative causes, we are, nevertheless, satisfied that we have seen it carried much too far, even in the most favourable subjects. Admitting with Blundell, as we do, that the proximate cause of the disease consists in a turgescence of the cerebral vessels, it should never be forgotten that that condition is not unfrequently associated with an opposite state of the vascular system in other parts, and that large bleedings under such circumstances are more likely to aggravate than to relieve the evil. The testimony of Gooch, that he never saw a single patient die from convulsions, "unless the lancet had been unemployed, or employed insufficiently," is expressed in strong terms; but in our opinion, in respect to very large bleedings, the experience of Merriman, Mauriceau and Madame Lachapelle, is at least of equal force in favour of a more restricted use of the lancet. The experience of the sagacious Denman, cited by our author, that the heart may be unusually flaccid, while there is extreme fulness in the cerebral vessels, should admonish us on this point. Although the patient may not be immediately destroyed by the excessive depletion, her life will be endangered from effusion consequent upon it, in the ventricles of the brain or other important cavities.

On the propriety and importance of artificial delivery, the author makes the subjoined judicious remarks:

Quoting from the paper of Mr. Symonds, contained in the London Lancet, "Instructed by my own experience, and fortified by the authority of such writers as Denman, Blundell and Gooch, I should say with the latter, take care of the convulsions and let the uterus take care of itself."

"In this," says Mr. I., "as a general principle, I quite concur; but exceptions to it may arise. When the attack appears during actual labour, our line of practice is clearly defined; we must moderate excessive action, and deliver on the first favourable moment. But should the convulsions *precede* labour, the practice pursued by Dr. Joseph Clarke (very similar to that recommended by La Motte) is the most rational that can be followed, viz., to trust to nature's efforts, aided by medical treatment, until the patient's life appears to be *immediately* endangered by the continuance of the disease, and then to interfere in the speediest and safest manner to promote delivery. The circumstances which justify interference, demand an impartial and dispassionate consideration, and should embrace the state of the uterus, the presentation of the fœtus, the period of gestation, and the violence of the symptoms."

The author is of opinion, that

"The want of success in delivering, generally arises from one of two causes: the first, delivering too early, before the uterine orifice has undergone sufficient relaxation; the second, postponing the delivery until effusion has taken place, or a fatal impression been made upon the brain. Previous to delivery being attempted, sufficient relaxation of the uterus must therefore be obtained by

bleeding or emetic medicines in nauseating doses, purgative enemata, and perhaps the application of belladonna to its orifice, otherwise we incur the risk either of an apoplectic seizure, or a laceration of the uterus or vagina."

Although the preceding remarks contain nothing that is particularly new, they at least inculcate sound practice, which is of far more importance.

The remarks on convulsions are closed by an account of thirty-five cases, which occurred under the notice of the author and his friends. Some of these happened during pregnancy, many during labour, and others subsequent to delivery; the greater number of the patients recovered. Of those cases which terminated unfavourably, but few were examined after death, in consequence of the opposition on the part of their friends. This shows a state of feeling in that country very unfavourable to the prosecution of pathological inquiries, the more to be regretted, because of the number and intelligence of those capable of conducting such investigations, to the honour of science and the benefit of the human race.

Of the autopsies reported by the author, effusions in the ventricles of the brain, and sanguine congestions of its vessels, were very commonly observed; we recollect, indeed, but a single exception.

In a note subjoined to this section, Mr. Ingleby speaks in the highest terms of "tartarized antimony in the sthenic form of eclampsia, the attack taking place within a very short period after delivery."

"The agency of this medicine," he observes, "is of singular value; for, whilst it lowers inordinate action, it does not produce those distressing secondary effects which follow large bleedings. Although the emetic tartar cannot be regarded altogether as a substitute for bleeding, the repeated employment of the lancet becomes in a great measure unnecessary, provided, indeed, the influence of the medicine is maintained over the system until the activity of the disease is overcome."

The *second section* is "on malposition of the uterus, ovaria, bladder, and urethra, both in the impregnated and unimpregnated state, in connexion with retention of urine," and contains many interesting facts and judicious remarks; but nothing particularly novel or striking.

Section third treats of "obstructions in the soft parts to the progress of labour." The subjects which it embraces are organic defects, as tumours—labial, vaginal, and uterine; contractions of the orifice and canal of the vagina, protrusion of the bladder and rectum, &c. The consideration of these properly belongs to the department of special surgery. Although somewhat desultory in its character, the section is creditable to the industry and sound practical knowledge of the author.

The *fourth section* is "on induction of premature labour in cases of organic disease."

Dr. Merriman long since laid it down as a rule, that the inducement of premature labour by art ought to be strictly confined to cases of distorted pelvis. Dr. Ashwell has extended "the principle to cases in which tumours have formed within the uterus, or in connexion with enlargement of the ovary, and also to extraneous growths in the

vicinity of the uterus, such as are liable to inflame during gestation, or calculated to offer a formidable obstacle to parturition."

Mr. Ingleby, while he seems to think the rule prescribed by Dr. Merriman may be advantageously extended, entertains doubts whether the facts furnished by Dr. Ashwell in support of his views, "afford sufficient data to establish as a general principle, the adoption of the proposed measure in similar cases" to those contained in his paper. The section before us is devoted to a consideration of the various circumstances under which "the proposed measure" may be deemed advisable, and embraces some interesting facts; but we have not discovered that they have led the author to very distinct or methodical conclusions. So numerous are the diseases to which the human female is liable, and especially her genital organs, and so various the circumstances of individual cases, that it is impossible to lay down any very strict rules for their management. We can only agree on general principles; but at last, every case of malformation, or structural change, must be examined and decided on its own merits, under the guidance of an enlightened experience.

The *fourth section* is "on laceration of the uterus and vagina."

The occurrence of laceration of the uterus and vagina, has hitherto been regarded as extremely unusual. In the United States but very few cases have been recorded. There is reason, however, to believe that too frequently it takes place without being suspected; particularly among the inmates of almshouses and the operatives of large manufactories. According to our author, "their comparative frequency, which is by no means well ascertained, is said to vary from one in three hundred to one in four thousand cases." Of the sixteen thousand four hundred and fourteen deliveries in the Dublin Lying-in Hospital during the mastership of Dr. Collins, thirty-four suffered lacerations of this kind, being an average of one in four hundred and eighty-two.

Mr. Ingleby is "disposed to regard their occurrence as much more frequent than is generally believed, and as connected with sudden instances of death." "On general principles," he observes, "it might be inferred that lacerations would arise more frequently in first than in subsequent labours; but the contrary, I believe, is the truth." In proof of this position he cites several very respectable authorities, and Ramsbotham in particular, who "never met with an instance of ruptured uterus in a first lying-in." The following remarks of the author on this subject, contain his views of the cause of this difference.

"An opinion has prevailed that the uterus will sustain with impunity a more powerful contraction in a first labour than its textures are afterwards equal to, that these textures become impaired by frequent child bearing, and easily lacerate, but the deduction is unsupported by evidence. In the disease termed *malacosteon*, the sacral promontory undergoes a sensible change in its figure, *antecedent* to any apparent softening of the pelvic bones in general, and the reason is obvious. This yielding, which is at first very slight and is arrested after delivery, returns with a recurrence of pregnancy, rendering each act of parturition more difficult. Thus we understand why lacerations occur more

frequently in women who have borne children, than in primaparæ; and the explanation is far more consistent with the principles of physiology, than to ascribe the injury to attenuation of the uterine tissues."

The author, however, does not deny that rupture may arise from a diseased condition of the uterus or vagina; and he expressly mentions cases in which it occurred from convulsions, and irregular contractions of the uterus. He also points out with great force the danger of suffering a patient to struggle unavailingly, where the disposition between the head and pelvis is such as to forbid the hope of speedy delivery by her own unaided powers.

"It is impossible," he remarks, "to read attentively many of the cases hitherto recorded, without being able to trace the laceration to a *direct* impediment affecting the progress of labour. Impaction, properly so called, is inseparable from danger, and may be regarded as a test of the practitioner's skill and discernment."

The justness of these observations must be admitted by every one. No experienced practitioner can have failed to observe many deplorable instances of long continued uterine efforts, exhausting if not destroying the patient, where it was impossible for the head to pass through the pelvis; and if lacerations have not more frequently occurred, it is perhaps scarcely less a subject for regret than surprise—regret, for the poor subjects who, instead of being speedily relieved by the hand of death, have only been doomed to suffer further torments, without a better result.

In the *sixth section*, which is on "*inversion of the uterus*," we find little that is new, although much to commend.

The author is an advocate for the return of the uterus, even after a considerable lapse of time. In support of his views, a very interesting case is related, in which he succeeded in the reduction eight days after delivery. He "found her nearly without pulse, exsanguine, comatose, delirious on being roused, and apparently moribund." The patient recovered.

The *seventh* and last *section* is "*on the signs and symptoms of pregnancy—their obscure and deceptive characters—their complication with disease, and the signs which denote the extinction of life in the fœtus.*"

The subjects embraced in this section alone, if fully considered, would occupy a volume; of course the present commentary is necessarily brief, being comprised in about sixty pages. Much of this likewise consists of matter already before the public, arranged according to the author's peculiar views, and illustrated by facts drawn from his own experience. From the latter we shall select a few points of more prominent interest. In addition to the swelling of the breasts and areola around the nipple, as indicative of pregnancy, he adds two other changes, which we have not been accustomed to notice.

"The first consists of a very scaly state of the cuticle covering the areola; the second, in a discoloration, not very unlike the areola, and partially affecting the whole surface of the breasts. The breasts present a curious mottled or checkered appearance, of an irregularly brown hue, with intervening spaces, defined in extent, circular in form, and as white as the skin over the body in general. The last mentioned appearance is strongly presumptive of pregnancy."

According to the author's observations, although a single attack of hemorrhage may not only destroy the embryo, but also the mother, in the early weeks of pregnancy, "a protracted hemorrhage may not necessarily destroy the fœtus or terminate in abortion, notwithstanding the well known tendency." "Or the fœtus may perish, and yet be retained in utero until the ninth month." In relation to twin cases, we find the subjoined curious statements, which are deeply interesting in many respects.

"Whatever may be the condition of the dead fœtus, the tenantry of the living one, even up to its maturity, may in no respect be affected. A few weeks ago, on examining a mature placenta, the expulsion of which was attended with severe hemorrhage, a fœtus of four or five months' growth, flattened, but not putrid, was found within the membranes, closely adherent to the uterine surface of the mass; and yet a full sized living child, in connexion with this placenta, had just been expelled. It is singular that, although the placenta consisted of one solid mass, (not two placentæ connected by membrane,) one half of the mass, and the small fœtus attached to it, are reduced to a white substance, the line of demarcation between the dead and the living portion being very apparent. It could not have been exposed to atmospheric influence. When abortion happens in the middle months of gestation, the retention of the placenta is of frequent occurrence. On the expulsion of a twin, three, four, or five months old, having its own proper membranes and placenta, the uterine orifice may close quite as promptly, without any suspicion being raised of the presence of a second ovum; and if the woman be corpulent, the bulk of the uterus may not be easily determined. After the expiration of a given period, varying from a few hours to a few days, the uterus will probably expel the second ovum, and thus a charge of ignorance may be most unjustly and vexatiously preferred against the practitioner; a circumstance which I know to have occurred. In cases similar to this a difficulty respecting the vitality of the fœtus yet in utero is likely to occur. On the expulsion of a large mole or a diseased ovum from the uterus the same difficulty may arise, supposing a fœtus enclosed in its proper membranes to be still retained. Of this complication my own practice has furnished a striking example. After a long continued hemorrhage, a diseased placenta (of the grape kind) was cast off, but without any apparent fœtus; the os uteri closed, and, to the surprise of all parties, the patient was delivered a few weeks afterwards of a mature child and secundines. From this case, and several others of a similar kind, we see the propriety of carefully ascertaining the *bulk* of the uterus whenever any large substance has quitted its cavity—the practitioner's reputation may suffer by the neglect."

We have quoted the preceding observations, not only because of the infrequency of the circumstances detailed, but for the important practical instruction contained in the closing remark.

The author speaks in terms of great confidence of the stethoscope in determining the existence of pregnancy, as well as whether the fœtus is a living one; but some of his observations are rather calculated to lessen its importance, at least when compared with other means. Thus he remarks that he has in repeated instances distinctly detected the placental soufflet (on one or both sides of the uterus) and the pulsation of the fœtal heart, by means of the stethoscope, as well as by the naked ear. "But the soufflet is common," says the author, "to several diseases, and is, therefore, an uncertain evidence of pregnancy, although Drs. Ferguson and Kennedy think otherwise."

The sound of the fœtal heart, he contends, "is never with *certainty* heard before the fifth or sixth month," at least he has not been able to distinguish it at an earlier period.

"In a case of Cæsarean operation the fœtal heart could not be heard to pulsate, notwithstanding a most minute examination by several practitioners. The patient persisted, however, that she felt the child move, and it was extracted alive."

If the foregoing facts be established, the value of auscultation, in reference to obstetrics, is greatly diminished. For it must be a rare case indeed, when an experienced practitioner cannot detect the existence of pregnancy before "the fifth or sixth month," without the stethoscope, or any other means of auscultation. And as to the matter of the child's life influencing the course of practice in difficult cases of labour, we hold it to be greatly overrated.

The propriety of the rule which prescribes that the life of the mother must never be jeopardized for the welfare of the unborn child, will hardly be disputed by any one. This being admitted, it is only where we desire to abridge the sufferings of the patient, as in cases where it is supposed that the forceps or long continued uterine efforts would enable her to deliver herself that it becomes a point for consideration. In such a case, if assured of the child's death, a resort to the crotchet, by lessening the head, will facilitate its delivery and shorten the patient's sufferings. But here an experienced practitioner rarely fails to discover whether the child be alive by ordinary means; and it is precisely the situation in which it is admitted that auscultation is least to be relied on, in consequence of the position of the child among the bones of the pelvis, and the controlled state of its circulation from the action of the uterus upon it. Let us not be understood as discouraging stethoscopic or other means of auscultation in our art—far from it—we only wish to guard the inexperienced from an implicit reliance upon it, in *opposition* to other evidences, or in a too confident dependence upon it, in the *absence* of confirmatory proofs. Let no man puncture the cranium of a child, because he cannot discover the beating of its vessels—other evidences and weightier reasons are necessary. Let it be recollected that some of the most eminent members of the profession have occasionally failed to discover either the placental soufflet or beating of the fœtal heart, where time and events proved their existence. Mr. Ingleby cites Ryan, Capuron and Velpeau of this number, and he might have greatly extended the list. We should not deem these cautionary observations necessary, but auscultation is not only *new*, but *fashionable;* and we have lived to see that if some men "prefer old errors to new truths," there are others not less attracted by novelty, who are prone to rely too sanguinely on new means and hastily formed opinions.

R. M. H.

BIBLIOGRAPHICAL NOTICES.

ART. XIV. *Des Pertes Seminales Involontaires.* Par M. LALLEMAND, Professeur à la Faculté de Médecine de Montpellier. Paris, 1836: 8vo. pp. 312.
On Involuntary Seminal Discharges. By M. LALLEMAND, Professor in the Faculty of Medicine of Montpellier. Paris, 1836: pp. 312.

It is not a matter of every day occurrence for us to meet with a work replete with new facts, and illustrating important practical applications of pathological phenomena. When we find a rarity of this sort we know how to value it, and eagerly receive the new and welcome addition to the science. Amongst this valuable class of new works the memoir of Professor Lallemand must certainly be placed. It throws a new light upon a variety of disease which is always obscure, and which is sometimes so concealed by its protean and variable symptoms, as to elude the observation of physicians whose knowledge and experience give them a high and deserved reputation.

Of late years the most accurate and classical works have chiefly tended to increase the precision of our diagnosis and to extend the limits of pathological anatomy. They are therefore most useful materials, upon which a superstructure of practical therapeutics will probably be soon erected; but if physicians turn to them in the hope of suddenly acquiring new and more successful methods of treating the diseases, with which they are already to a certain extent familiar, they are very generally disappointed. From this deficiency of practical knowledge suited for immediate application, some physicians scarcely admit the utility of many scientific truths, and are therefore disposed to undervalue the labours of the patient inquirer who contents himself with the pleasure of discovering a new class of facts, which have only a remote connexion with the strictly practical part of our profession.

Dr. Lallemand has fortunately done more than illustrate the pathology of disease. He has indicated the best method of treatment, and he has proven by a reference to facts, that the results of treatment are vastly more certain and satisfactory than they are in most diseases. We shall give his own account of the process by which he arrived at these conclusions.

"In the space of from thirteen to fourteen years, I have noticed more than one hundred and fifty cases of involuntary seminal discharges, of sufficient severity to greatly derange the health of the sufferer, and even to cause death."—"The greater part of these patients were sent to me, on account of imaginary cerebral diseases of more or less standing. Thus, by a strange singularity, it was after the publication of my *Researches into the pathological anatomy of the brain and its membranes*, that I was consulted for the most remarkable cases of diurnal pollutions, and I was myself obliged to deny the existence of diseases of the brain or its appendages in many cases in which it seemed probable."

"Many other patients were supposed to have chronic gastritis, or gastro-enteritis, aneurisms of the heart, commencing phthisis, &c. &c., or else nervous affections, and, above all others, hypochondria.

"These few remarks will show that the involuntary emissions of semen are frequent, dangerous, and are recognised with difficulty; that they give rise almost every day to deplorable errors of practice; and we may already foresee that their causes are much more numerous than is usually believed, and that the treatment must often present many difficulties." * * * * "I am writing for practitioners. They only, perhaps, will feel the importance of so many varied observations, and

will receive advantage from them; men of little experience should read them with care, and be on their guard against the influence of their imagination. Amongst those of my pupils who consulted me for seminal discharges, there were more who were frightened rather than really ill."

In a few cases, Dr. Lallemand has had an opportunity of examining the bodies of patients who died of exhaustion caused by involuntary discharges of semen, or else perished of an accidental affection during the continuance of these disorders. In such cases the orifice of the ejaculatory canals was dilated, the seminal vesicles hardened and contracted, and the prostate gland generally diseased. In several subjects the gland was filled with a multitude of little abscesses, and its whole tissue was pale and soft. The urethra was rarely free from lesions; it was thickened, and a firm and extensive stricture was found in several patients. The great liability to stricture depended upon a course which will be mentioned presently. As usually happens with diseases of the genito-urinary organs, the affection was not limited to the urethra, but extended to the bladder, and often to the kidneys. This extension of diseases renders it rather difficult for us to appreciate the exact relation between some of the symptoms, and the lesion of the urethra and seminal vesicles. It is well known that the diseases of the kidneys sometimes produce the most extensive disturbance of the nervous system, and cause a rapid deterioration of the whole economy, which ends nearly always in death. The only way to determine what part the disease of the seminal organs has had in the production of the symptoms, is to examine the succession of phenomena, and in the earlier stages of the disease endeavour to ascertain if the symptoms were more strictly local. The bladder was sometimes diseased; but it was not so frequently affected nor to as great a degree as we might have concluded from its close connexion with the seat of the disease.

The author gives nine cases with dissections, but seven of them are collected from the works of various authors, and are necessarily imperfect. Five of these cases were observed by himself, and are given in sufficient detail. In both cases the original cause of the disease had been a gonorrhœa contracted many years previously, which ended at last in continual discharges of semen without venereal desires. These discharges generally occurred while the patient was voiding his urine or going to stool, especially if constipated. The patients, like most others, lost sight of their original disorder, and complained of the feebleness of their nervous system, and the apparent apoplectic symptoms under which they laboured from time to time.

The symptoms in these fatal cases were of slow and gradual growth, very similar to those which are observed in dyspepsia and simple nervous functional disorder; and which are, of course, amongst the most vexatious complaints with which physicians are puzzled. Indeed it is evident, that these researches of M. Lallemand will furnish a key to many of those troublesome affections, and will furnish the means of a radical and permanent cure, in place of those feeble palliative means, which at last baffle the physician and exhaust the patience of the sufferer. The earliest symptoms were referred to the alimentary canal. There was obstinate constipation, difficulty in digestion, and the stomach could no longer endure alcoholic drinks, or meats which were highly spiced; there was constant accumulation of gas in the intestine; and finally coition became infrequent, incomplete, until at last, total impotency supervened. The cerebral symptoms are closely connected with those above mentioned, and sometimes occur at the same time. The patient becomes hypochondriac; avoids society; is disgusted with the gayeties in which he now takes no part; falls at last into a state of profound misanthropy, and thinks of nothing but of the dilapidated state of his health. The disorders of the intelligence present something peculiar; thus, the thread of ideas seems broken; the memory is feeble,

and the slightest mental agitation causes an immediate rush of blood to the head.

These cerebral congestions are sometimes hastened by disturbed digestion, which favours the operation of the more permanent causes. And as M. Lallemand remarks, they differ from ordinary congestions in the fulness of the pulse, the general exhaustion and anxiety, the paleness of the face, and entire prostration, *without evident local paralysis*, and without one part of the body being more affected than another. The deterioration of the health which has existed for years previously to the cerebral congestion in most cases of seminal emissions, is another very good diagnostic character between them and ordinary apoplexy. Although the intellect is not often sufficiently disturbed to give rise to delirium, there is a peculiar slowness and unsteadiness of thought, which may be obviated for the moment, by diligent questioning and recalling the attention of the patient repeatedly to the subject. We think we have seen cases of the kind, and although the general symptoms were certainly very analogous to those which result from masturbation, without inflammation of the urethra or seminal vesicles, there was usually some distinctive character which separated those affections. There is one symptom arising both from masturbation and involuntary discharges of semen, which is a sign of great importance. That is, an extraordinary anxiety and agitation combined with a strong aversion to much questioning, and great indocility of the patient. If there is no involuntary discharge of semen while the patient is awake, we should in such cases suspect the habit of onanism as the cause of all the mischief.

The author has examined the relation of the lesions found after death with the succession of symptoms. From his observations, he concludes that the cause of the chronic inflammation, and partial disorganization of the canals and seminal vesicles, resides in the inflammation of that portion of the urethra which is immediately connected with them. This part of the urethra is always inflamed in severe gonorrhœa, and what is even more essential, it continues in a diseased condition after the rest of the urethra has returned to its normal state. This local inflammation is well known to be the most frequent source of chronic gleet and half cured gonorrhœa, which torment the patient for years after the cessation of the acute symptoms. The opening of the canals upon this part of the urethra accounts for the transmission of the inflammation to the testicles, as well as to the seminal vesicles; and we agree with Dr. Lallemand that orchitis more frequently results from this transmission of the inflammation along a continuous tissue, than from any actual metastasis. The same contiguity and identity of tissue will account for the chronic disease of the prostate gland, which was one of the most remarkable phenomena observed in these dissections.

The point of pathological anatomy in relation to which the author is least definite, is the alteration of the kidneys and bladder. The researches of Dr. Bright have thrown a new light upon those affections; and as the urine was remarkably pellucid as well as variable in quantity, in many cases of seminal discharges, we regret that Dr. Lallemand had not been able to repeat his observations after the inquiries of Dr. Bright had become better known. They might have led him to some interesting conclusions, and perhaps, in some degree, have modified his results. Still, we believe, that he is perfectly justified in regarding the affection of the urethra as the starting point of the lesions of the urinary organs, and that the inflammation was communicated by direct extension along the mucous tissue.

The urethra, and the other parts of the genito-urinary system, all concur in the production of the symptoms; and without care the relative importance of the various functional disorders might be misunderstood; it is, therefore, important for the diagnosis, to remark that the emission of the semen occurs towards the close of urination. The patients often feel a spasmodic contraction in the

region of the vesicles, and discharge, with the last drops of urine, the glairy liquid characteristic of this affection. The author admits that this liquid does not possess all the qualities of healthy semen; but he believes (without giving the proofs) that the seminal animalcula are deficient, analogous to the deficiency of the urea in diabetes. But, as the liquid resembles semen in most of its sensible qualities, and as the pathological anatomy and the history of the symptoms evidently connect the affection with the lesions of the seminal organs, he cannot regard the fluid as any thing else than ill-elaborated semen. When the discharges of the seminal fluid are very frequent and abundant, there is a constant desire to pass the urine.

We have already stated, that gonorrhœa was the most frequent cause of this disease. The observations detailed in the work, prove this in the most conclusive manner, and show the great danger of neglecting these inflammations, which, in their chronic state, produce involuntary seminal discharges. The frequency of chronic disorder of the urethra and the genital organs is also increased by the rash and empirical use of copaiva; but other causes, however, concurred in producing the seminal discharges; the patients were chiefly individuals of a nervous, excitable temperament, and had previously been addicted to venereal excesses or to masturbation. Most of them had experienced repeated attacks of gonorrhœa, and the disease of the urethra rarely occurred after a single attack.

After gonorrhœa and masturbation, the most frequent source of these involuntary discharges of semen is the existence of chronic diseases of the skin, or rather of the deranged health which favours the developement of these eruptions. When these eruptions suddenly cease, a urethral discharge sometimes occurs, which may be readily mistaken for ordinary gonorrhœa. If the eruption again occur, either naturally or after the use of flannel or other irritants upon the skin, these false gonorrhœas will generally cease. If they are protracted, or if they return at short intervals, the seminal vesicles and ejaculatory canals soon become affected, and the ordinary symptoms of the affection are developed. The close connexion between the skin and the mucous coat of the urethra, may, in some measure, account for these symptoms.

It is singular that affections of the rectum which oppose mechanical obstacles to the passage of the fæces, and thereby give rise to prolonged and obstinate constipation, should in the end produce a weakness of the seminal vesicles. At each act of defecation, the pressure of the hardened contents of the rectum forces a half elaborated semen from the vesicles, and the patient feels his health and mental energies sink under the influence of some inexplicable connexion of the rectum with the brain. Even a fissure at the anus, or neglected and painful hemorrhoidal tumours, occasionally give rise to similar symptoms, merely from the obstacle to the passage of the fæces and the consequent straining and severe pressure upon the urethra.

In a few cases, ascarides in the rectum occasioned so much irritation as to react upon the urethra and seminal vesicles and give rise to profuse involuntary emissions. A most remarkable case is related by Mr. Lallemand of obstinate discharges, chiefly, however, during sleep, which resisted all methods of treatment until the ascarides were removed by large and repeated enemata of very cold water.

The most agreeable part of the work is, that the treatment proved very successful. The author does not state what is the proportion of cases which he has cured or greatly relieved; but he has given such complete histories of a large number, that we are quite sure that his treatment was both judicious and efficacious. It is founded on very simple and plain reasoning. If the emissions depend upon a disease of the rectum, upon obstinate constipation, worms, or any other obvious cause, the removal of these sources of irritation will rapidly cure the patient. But if the disease is the result of severe or prolonged gonor-

rhœal discharges, the chronic inflammation of the prostatic portion of the urethra, and of the neck of the bladder, can only be removed by cauterization. The author passes the nitrate of silver into the urethra, enclosed in a suitable instrument, and turns it very rapidly over the portion to be cauterized. It should remain in contact with the urethra the shortest time possible, and then be instantly withdrawn. After the application of the caustic, the discharge of urine becomes excessively painful for a day or two, and is sometimes a little tinged with blood. But after the pain has abated, the discharge of semen is suspended, the patient experiences a sensation of strength in the parts to which he had long been a stranger, and in a short time the urine becomes clear and quite free from any admixture of glairy fluid, while the general symptoms are rapidly ameliorated.

The successful results of M. Lallemand encourage us greatly, and henceforward, when the symptoms which have been mentioned exist, no practitioner should forget to inquire if a glairy, viscid fluid, is discharged while passing the last drops of urine, or when straining during evacuation of the bowels. By treating such patients judiciously, a class of cases are curable, which, under ordinary circumstances, are quite intractable. W. W. G.

ART. XV. *Medico-Chirurgical Transactions, published by the Royal Medical and Chirurgical Society of London, for* 1836. *Volume the twentieth.* London, 1837. 8vo. pp. 384.

The contents of the present volume of Medico-Chirurgical Transactions are, generally speaking, of so interesting a nature, that our readers, we are persuaded, will not be displeased should we present them with a more full analysis of it than is usual in bibliographical notices.

The first article is by Dr. J. Yelloly of London, being *Observations on Vascular Appearances of Mucous and Serous Membranes, as indicative of Inflammation.* In a former communication, inserted in the fourth volume of these Transactions, Dr. Y. endeavoured to show by a series of observations that

"Appearances of vascular fulness in the villous coat of the stomach, whether florid or dark coloured, in distinct vessels, or in extravasations of different sizes, are not to be regarded as unequivocal marks of disease, inasmuch as they occur in every variety of degree and character, under every circumstance of previous indisposition, and in situations where the most healthy aspect of the organ is to be expected."

"That such vascularity is entirely venous, though sometimes florid, and sometimes of a dark red; that it depends on a power capable of being exercised on the artery itself at the close of life, which carries on the blood to the veins, after the further supply of fresh blood from the heart is stopped, and that the branched or stellated form of vessels, under which the vascularity usually appears, is capable of being imitated, whether by injection of the veins with fine injection, or by forcing back with the finger, or the back of a scalpel, the blood from the larger branches of veins into the smaller.

"The vascularity soon becomes diffused redness, by transudation through the coats of the containing vessels, just as happens with the bile in the gall bladder, or in the speedy production of a blue colour, when mesenteric arteries are injected with a solution of prussiate of potash, and the veins with that of green sulphate of iron."

"That it is very difficult to ascertain, merely from the aspect of the vessels of a dead part, that they had been affected with inflammation during life, unless for the occurrence of unequivocal results of inflammatory action."

The object of the present communication of Dr. Yelloly is to illustrate and enforce the correctness of the foregoing propositions, in reference as well to the serous as to the mucous tissue. The illustrations are drawn chiefly from the

writings of the continental physicians, more especially, however, from the *Précis D'Anatomie Pathologique* of M. Andral.

That mere vascular fulness or increased redness of a tissue, after death, is no conclusive indication of its having been the seat of inflammation, is now generally acknowledged; but that such an appearance is to be viewed in almost every instance as a cadaveric phenomenon, we are very far from being prepared to admit.

2. *History of a remarkable case of Varicose Aneurism, with Observations.* By J. G. Perry, Surgeon, &c.—This is not only a very remarkable, but a highly interesting case, showing that a true varicose aneurism may be produced by other causes than a wound penetrating through the vein into the subjacent artery. That such should be the case is certainly contrary to what has been inferred from the circumstances of all the cases heretofore recorded; while "the great indisposition manifested by blood-vessels, and especially veins, to partake of the ulcerative process, even when it may have involved all the surrounding tissues, rendered it very improbable that an opening would take place in the coats of one of the last mentioned vessels from any of the ordinary causes of absorption. Aneurisms of large arteries have often been seen to cause, by their pressure, absorption of all the solid structures around, without their accompanying veins becoming, in any degree, involved in the general havoc." The present case will, however, suffice to prove that such laws, though of *general*, are not of *universal* application. The patient, a man 47 years of age, was never a very strong man, and was discharged from the army, in 1819, on account of general ill health.

"He had no recollection of any accident having occurred to him except one, a few years before he left the army, when he and his horse were knocked down by the fall of a heavy piece of timber. His left knee was much hurt at the time, and had never since been as strong as the other, and sometimes had been so painful as to lead him to apply for surgical assistance.

"In the year 1831, being at that time employed in drawing a truck, he suffered for several months from pain in the foot, at its inner side, and matter formed, and was discharged from that part. Sometime in the course of the same year he first perceived a small swelling a little below his left knee, but it gave him no pain and he disregarded it. The swelling increased very slowly in size and troubled him very little, that he could recollect, for two or three years, except that occasionally, when drawing his truck, he was seized with pain in it to such a degree as to be obliged to stop for a few minutes from his work.

"About two years after the first discovery of the tumour, his wife accidentally perceived a *palpitation* (to use his own phrase) in the middle of the left thigh, which alarmed her very much, as she connected it in her mind with a palpitation he was then subject to about his heart, and which was sometimes so violent as to prevent him from doing any work. The patient himself, however, suffering no inconvenience from the condition of the thigh, paid no attention to it. The *palpitation* in the thigh went on increasing, as did also the swelling in the leg, nothing being done for their relief until February 6th, 1834, when he applied for admission into the infirmary."

On his admission an aneurismal tumour of considerable size was discovered at the upper part and inner side of the calf of the left leg, apparently occupying the lower end of the popliteal, or the commencement of the posterior tibial artery. The contents of the sac were so entirely fluid, that it could be almost emptied by pressure with the hand. Pulsation could be felt distinctly in the interior tibial artery as it passed over the tarsus, and obscurely in the posterior tibial, behind the internal malleolus. As the patient lay on his bed with the limb placed on its outer side, a very remarkable pulsation could be distinctly seen along the course of the femoral artery and vein, beginning about two inches below the crural arch, and terminating at the spot where the femoral vessels become included in the tendinous sheath formed by the triceps muscle. When the hand was laid upon any part of this region a very peculiar thrilling

was perceived, occupying a space of at least two inches on either side of the vessels, but varying in intensity and force according to the distance of the part examined from them. This thrilling was quite distinguishable from the pulsation of the artery.

In consultation it was decided that the diseased state of the vessel rendered it inexpedient to place a ligature upon it, until the increase of the tumour in the ham should have brought the patient's life into immediate danger.

"Neither did the ligature of the external iliac artery promise a more successful event, since its pulsation could be felt and heard over so wide a space, that it also was conceived to be greatly dilated, if not decidedly aneurismal."

The relater of the case having accidentally discovered that by pressing the point of his finger upon a part of the artery immediately before it entered the sheath of the triceps, he could entirely stop the thrilling, without interrupting the circulation of the vessel, suspected the existence of a communication at this part between the artery and vein. The patient, however, constantly denied that he had ever received a wound in that situation, and no scar was visible on the skin. The treatment of the patient during his continuance in the infirmary, was confined to means adapted to diminish the force of the circulation, while rest in the recumbent posture was most strictly enjoined. Pressure, by means of a bandage extending from the foot nearly to the groin, was for some time persevered in, but was eventually abandoned on account of the uneasiness it occasioned.

"For this was substituted the more circumscribed pressure of a spring, resembling a truss, having at its extremity a small pad, intended to imitate, as nearly as possible, the pressure of the point of the finger, which was so effectual in restraining the thrill."

In this manner it was hoped that the presumed communication between the vessels would be obliterated, and such a condition of the parts produced as would justify the ligature of the femoral artery, for the cure of the aneurism in the ham, whilst it was thought possible that the retardation of the circulation through the artery might even afford occasion for the natural cure taking place in the sac.

After a residence of nine months in the infirmary, no change was observable in the condition of the diseased parts, and the patient at his urgent request was discharged, November 24, 1834. He was regularly visited until September, 1835, by the assistant surgeons of the institution, and occasionally by Mr. Perry, who was able to perceive no change in the size or other characters of the popliteal tumour; but the thrilling in the thigh became obviously diminished in force and extent, and could no longer be seen as before. The superficial veins of the leg became remarkably enlarged.

"These changes were sufficiently explained on dissection by the obliteration which was found to have been brought about in the vein, probably by the long continued pressure, and which, by diminishing the bulk of the circulating contents of the vessel, rendered that remarkable *bruissement* less obvious than before. The obliteration of the femoral vein also accounted for the enlargement of the superficial veins."

On the evening of the 9th of September, the patient applied to be readmitted into the infirmary, on account of the great and sudden enlargement of the tumour in the ham, which had taken place a few days before, preceded by much pain and throbbing. The tumour was nearly four times its former size, but still retained its original form; the skin which covered it was extremely tense, and presented, at its most prominent part, a livid discoloration, which seemed to threaten almost immediate sloughing. Great pain was felt in the tumour and down the leg, while the superficial veins were very much enlarged and distended with blood.

The certainty that the patient would perish from hemorrhage should the aneurism be allowed to slough, induced Mr. P. to give to him the slender

chance presented by the ligature of the artery. The operation was accordingly performed on the following day in the usual situation.

"Upon dividing the integuments and sheath of the vessels, the artery was found to be enlarged nearly to the size of the abdominal aorta, and its coats so remarkably thin, that it presented more of the appearance of a vein than of an artery. Much difficulty being experienced in carrying the point of the needle round the artery, apparently from adhesion at its back part, and its extreme tenuity rendering it very hazardous to employ any degree of force, it was deemed adviseable to enlarge the opening in the sheath, and pass the ligature about half an inch higher up, which was effected without any difficulty. So attenuated and fragile were the coats of the vessel, that they actually gave way under the slight pressure made by the fingers of a gentleman, who held it with a view of assisting in the passage of the needle under it, and blood issued in a minute jet from its anterior surface. This accident made it necessary to observe the greatest caution in tightening the ligature, as it seemed not improbable that if drawn with ordinary force, it would completely divide the artery. The noose was, therefore, only drawn to a sufficient degree to stop the pulsation in the sac and lower portion of the artery, and as the bleeding from the small laceration before described immediately ceased, it was deemed that enough had been accomplished to stop the circulation through the vessel, and the wound having been closed by straps of adhesive plaster, the patient was carried back to bed."

It is unnecessary to detail the symptoms of the case between the operation and the night of the 15th of September, when a hemorrhage suddenly took place from the wound to a very large amount, inducing a state of syncope, from which the patient was with difficulty revived. The bleeding was on this occasion restrained by pressure on the wound, but recurred on the following day, when the patient sank exhausted, on the sixth day after the operation.

"*Dissection.*—The lungs were adherent in many parts to the costal pleura, and presented several old cavities which were cicatrized. The pericardium was universally adherent to the surface of the heart. The right auricle was large; right ventricle proportionably small; the left ventricle dilated and hypertrophied. The tricuspid and mitral valves were healthy, as well as those of the pulmonary artery and aorta. In the coats of the aorta, at its commencement, at the arch, and near its bifurcation, was deposited much of the atheromatous matter usually found in large arteries of aneurismal subjects. A single pointed spiculum of bone presented itself among the atheromatous matter at the arch. The aorta was much dilated about the origin of the arteria innominata, which vessel was unusually large. The abdominal aorta was rather thin in its coats.

"The external iliac arteries, especially the left, were extremely tortuous, being reflected upon themselves in a singular manner, during their course towards the crural arch; a condition which had, no doubt, given rise to the impression of the artery being extremely dilated, since it conveyed to the hand simultaneously the combined pulsations of the folded portions. The coats of the femoral artery, throughout its whole course, were scarcely, if at all, thicker than those of a vein, the attenuation having, as a careful dissection afterwards proved, taken place equally in all its coats. Immediately below the origin of the profunda the vessel was greatly dilated, having the appearance of an aneurismal sac. Its coats were here softened and much attenuated, and presented an aperture anteriorly, large enough to admit the point of the ring finger, from which the fatal hemorrhage had taken place. The ligature had been placed at a very short distance below this part of the vessel. The wound was full of coagulum, which had also made its way into the sartorious and surrounding muscles, and by its pressure had probably restrained the hemorrhage so as to prevent the patient from bleeding to death at its first access.

"At the spot in the thigh were the communication had been presumed to exist between the artery and vein, there was an aneurismal sac, about as large as half a walnut, firmly ossified within, which, by the pressure it had exerted upon the vein, had caused absorption of its coats, so as to form a circular opening of about two lines in diameter, into which the aneurism had burst; thus inducing a free and persistent communication between the vessels. Just below the aperture, the

vein was obliterated at a single *point*, below which it was again pervious. In all the rest of its course up the thigh it was diminished in size and thickened."

The obliteration of the vein was no doubt caused by the use of the spring, which effectually compressed the vessel under the bony walls of the aneurism.

"At the lower part of the popliteal artery, exactly at the point of division into the anterior and posterior tibial trunks, the vessel was dilated into a very large aneurismal sac, which contained a small quantity of laminated fibrine; but the greater part of its contents consisted of loose coagula and serum. The tibia formed part of the walls of the sac, and was partly absorbed, so as to present a scabrous surface. The posterior tibial artery opened *from* the sac, as the popliteal had opened *into* it, by a circular and even orifice. The anterior tibial could not be examined, as it was sacrificed in separating the tumour from the tibia."

3. *Case of Recovery from the Insensibility of Intoxication, by the performance of Tracheotomy.* By G. Sampson, Esq., Surgeon, Salisbury.—A man, 31 years of age, was brought to the surgeon in a state of complete insensibility from intoxication, the pupils being largely dilated, the breathing stertorous, and all voluntary motion having been lost for at least four hours. The stomach pump was used, and from three to four pints of fluid drawn off, appearing to consist chiefly of brandy; after which tepid water with ipecacuanha diffused in it was several times injected into the stomach, and after awhile withdrawn. These means failing to excite vomiting, a strong solution of salt in water, afterwards of the sulphate of zinc, were repeatedly tried, with no better result. The apoplectic symptoms seemed rather to increase; the pulse grew fainter, and at last was scarcely perceptible; the whole surface of the body was cold and clammy, and the patient was insensible to every kind of stimulus. It occurred to Mr. S. that the comatose state in which the patient lay might not arise from apoplexy, but from torpor of the brain, in consequence of that organ being supplied with blood not duly oxygenated; for "the shrill tone and extreme difficulty of respiration showed the existence of collapse of the glottis, and imperfect transmission of air into the lungs, which might be accounted for by a paralyzed state of the eighth pair of nerves and recurrent branches." Under the belief, therefore, that if a mechanical respiration were carried on for a time, the blood might regain its stimulant properties and restore the energies of the brain and nervous system, the operation of tracheotomy was performed.

"The trachea was no sooner opened than the distension of the veins about the head and neck subsided, the violent efforts of the extra-respiratory muscles ceased, and in about half an hour regular and easy respiration through the wound was completely established; at the same time the pupils became slightly sensible to the stimulus of light, and the pulse returned to the wrist."

Directions were given for the frequent removal of the mucus which appeared at the wound. A piece of strong spring wire, with a bow at each end of it, was introduced into the orifice in a bent state; and being allowed to expand, the opening into the trachea was kept open and prevented from being covered by the muscles, even during the efforts of deglutition.

The patient passed a quiet night, and in the morning indicated by signs that he suffered from headache and soreness at the pit of the stomach; there was a tendency to sickness, and the tongue was coated with a peculiar whiteness, as if rubbed over with chalk. Moderate purgatives, followed by mild alkaline medicines, soon removed these symptoms, and a few leeches were applied to the throat to check too high a degree of inflammation; no further treatment was required. In about three weeks, the wound being healed, he was discharged cured, and has continued until now, a period of eight months, in perfect health.

4. *On the Treatment of Injuries received in Dissection.* By R. A. Stafford, Esq., Surgeon, &c.—Of this interesting and valuable paper we shall be able to give only a very brief notice, passing over entirely the histories of the several cases which it comprises. Mr. Stafford conceives that the phenomena resulting

from injuries received in dissection can only be satisfactorily accounted for on the supposition of the introduction of an animal poison.

"For," he remarks, "we find the most alarming and rapidly fatal cases to occur where there has been but a slight abrasion or scratch, as well as where a deeper wound has been inflicted by the point of the scissors, the hook, or the scalpel, so as to render questionable the probability of wounding the sheath of a tendon. Further, many cases are recorded in which no abrasion, scratch, incision, or puncture was noticed, or any evidence of such injury found on the most minute inspection of the part; consequently some deleterious poison must have been absorbed by the skin."

Mr. S. produces some remarkable instances of this mode of receiving the injury.

"In dissection wounds the constitutional symptoms and the local affection vary considerably, both in intensity and extent. In some individuals the wound itself only inflames; in some the absorbents also become inflamed; and in others an abscess may form in the axilla without further mischief. These are the simple cases; but there are others of a more formidable character—cases where, in a few hours, without the local injury being of any extent or severity, indeed hardly perceptible, the constitutional symptoms are of so appalling a nature, that the vital powers are at once overwhelmed, and almost immediate death is threatened. In other cases, again, diffuse cellular inflammation occurs in the hand, the arm, the axilla, the side, or some other part of the body, giving rise to vast collections of pus and sloughing of the cellular tegument, and thus overpowering the constitution. Absorption of animal matter may also be attended by the appearance of vesicles containing fluid in various parts of the body.—It may also produce mortification of the injured parts—irritative fever, eruptions, diarrhœa, and general ill health."

With regard to the treatment of these injuries, Mr. Stafford remarks:—

"When signs of absorption have taken place, which will be known by the pain and inflammation of the wound, and whether the absorbents are inflamed or not, it would be advisable to rub the argentum nitratum on the cuticle, across the course of the absorbents, about two inches in breadth, and sufficient to blacken the surface. If the absorbents are not inflamed, its application should take place on the forearm, as near as possible to the hand; but if they are already inflamed, it should be employed immediately above the point to which the inflammation has extended. The next step will be, to evacuate freely the contents of the bowels. The part around the wound will now probably begin to swell. It must be immediately reduced by leeches, and their application must be repeated at each accession of inflammation, or non-reduction of it. Soothing fomentations also must be employed, and poultices, &c. to the wound. Attention to the constitutional symptoms will now be of the utmost importance. If there be, according to the severity of the case, extreme pain in the wound, violent pain in the head, the back, in the lumbar region, rigor, tremor, tetanic convulsions, and extreme nervous depression,—these symptoms should be immediately combated as soon as they arise; and from the results of the treatment adopted in Drs. Simms' and Moss' cases, under such circumstances, the muriate of morphia appears to allay them more than any other remedy. In these cases, the effect of this medicine was remarkable. Although Dr. S. was suffering the most excruciating agony in the back and finger, with all the symptoms above mentioned, yet the remedy had an immediate effect in producing composure, and keeping down the violence. It appears advisable, therefore, to administer it in such doses, and with such frequency as to keep the patient under the influence of its action.

"After the first shock the system has received from the introduction of the poison, fever will supervene. This symptom will be, perhaps, best treated by sudorifics, and the usual means employed under such circumstances. A question may now arise, whether general bleeding should be employed or not? There may be individual cases, where the patient is of so plethoric a habit, or so inflammatory a tendency, that the abstraction of blood may be required; but, generally speaking, it appears to me that it would be better to avoid it. In the first place, the nervous system has already been depressed by the introduction of the

poison; in the second, the fever which is present cannot be considered simply of an inflammatory nature, but rather of an irritative kind; and in the third, although the present symptoms may be violent, yet perhaps from the formation of abscesses, and the general reduction of the patient, he will afterwards require as much of the restorative power as possible to recover his strength."

In many of Dr. Duncan's cases, in which the patients were bled, they never appeared to rally after the bleeding.

"Although it appears to me that general blood-letting is not advisable in most cases of injuries from absorption, (excepting under peculiar circumstances,) yet on the other hand I consider topical bleeding of the greatest consequence; indeed so important does it appear, that I feel persuaded that without its employment, when the inflammation of the hand and absorbents is very great, the patient has but little chance of recovery. Blood, therefore, should be abstracted by the repetition of leeches on the inflamed part, on any swelling arising from the wounds, along the course of the inflamed absorbents, and on the glands of the axilla, or any other part where their employment may be required."

In four of the cases recorded in the paper before us topical bleeding was employed, and in no one of them was there formation of pus in the axilla or the side.

"It not unfrequently happens, that in defiance of all our endeavours to prevent it, pus will be formed in the axilla, the side, or some other part. It now becomes a question of great importance in what manner a swelling, where such formation is suspected, ought to be treated? At first it will perhaps be extremely difficult to ascertain whether matter is formed or not, and at the same time the patient may be suffering from the tension of the part the most distressing symptoms. There may be great pain, depression, fluttering pulse, delirium, exhaustion, and general distress. Under these circumstances, whether pus is formed or not, the swelling ought to be opened; and as the chief object, if matter be not formed, is to relieve the tension of the part, the incision should be of considerable length."

In the case of Mr. Pierce the most alarming symptoms occurred, and even death was threatened from the distress the tension occasioned; as soon, however, as an incision was made into it, relief was obtained. Other cases are recorded by the writer of this paper, as well as by Drs. Duncan and Colles, and Mr. Travers, in which the importance of free incision into the swellings resulting from dissection wounds was very apparent. Life may no doubt in many cases be preserved by it.

"It is a remarkable fact, that in most of the cases related by Drs. Duncan, Colles and others, where a swelling or abscess took place without an opening having been made into it, the patients did not recover.—On the contrary, in those cases where openings were made, the patients lived.—The following inference, therefore, may fairly be drawn:—that free incisions made into swellings arising from the absorption of animal poison are attended by the most beneficial results, and that, from the facts now brought forward, they ought to be made in the earliest stage of their formation.

"The third stage of the treatment, when abscesses are discharging profusely, and the patient is reduced by the violence of the disease, consists in giving power and support to the constitution. Bark, wine, meat, porter, and nourishing diet of every description that the stomach can bear, and such as circumstances require, may be allowed. The abscesses and other symptoms may be treated according to the common principles of surgery. During the progress of the disease symptoms may arise, such as inflammation of the lungs, &c., which I have not mentioned. These can only be judged of by the attendant at the time, and should be treated accordingly."

5. *Account of a case of Fracture and Displacement of the Atlas.* By Benjamin Phillips, Esq.—The patient slipped off a hay-rick and fell to the ground head foremost, the occiput coming in contact with the soil. The stunning effect or concussion resulting from the fall was soon sufficiently dissipated to allow of his walking half a mile to the residence of the parish surgeon, by whom he

was bled and purged. Next day scarcely any inconvenience was experienced from the accident, and in two days more he returned to his occupation.

"From the day succeeding the accident he felt what he termed, and what really was, "a stiff neck," for he was unable to rotate the head. This stiffness was all he complained of when Mr. P. first saw him, which was between three weeks and a month from the occurrence of the accident, and on that day he had walked above two miles."

He was a powerful, scrofulous-looking man, of thirty-two; had enjoyed usually good health. The only uneasiness he experienced, and that slight, was in the back of his neck. Immediately over the second cervical vertebra a small tumour was discovered, pressure upon which occasioned only a slight pain.

All the functions of the economy, with the exception of the inability to rotate the head, were well performed, and Mr. P. could discover no other lesion of motion or sensation. He presumed that a chronic inflammation of a scrofulous character was developed in the first or second cervical vertebra, or both, and that the articulating surfaces between them had been so modified as to threaten what is termed "false anchylosis."

In consonance with this diagnosis the patient was directed to lie upon a mattrass without a pillow, and twelve leeches were applied to the affected part every third day. The leeches were applied six times, but the only effect they produced was the removal to a great extent of the tenderness. Ten days subsequently to the last application of leeches an issue was made in the neck over the tumour, which continued to discharge for two months, when it was dried up. The tenderness remained unchanged, but almost entirely disappeared after the issue had cicatrized; the tumour still retained its original character. Another issue was formed in the fifth week from the period when the cicatrization of the first was decided on. Soon after this Mr. P. noticed, what may have existed previously, a *thickness* of the voice, such as is produced by enlarged tonsils. On examination he found the tonsils to be greatly enlarged, but presented no indications of recent disease. A few days subsequently the patient complained of some inconvenience in swallowing. Upon a careful examination of the throat a slight projection or fulness was discovered at the back of the larynx, as near as may be at the level of the body of the second cervical vertebra. Mr. P. concluded that an enlargement of the body of the axis had been produced, which occasioned the difficulty in phonation and deglutition.

The second issue had been discharging for about five weeks, when he became the subject of a severe attack of pleuritis, for which he was copiously bled; by this attack he was a good deal debilitated, and during its progress the issue was healed. Soon after this, about nine months from the accident, symptoms of anasarca were manifested, and the infiltration shortly became general. From the anasarcous affection he continued to suffer more or less, until the forty-seventh week from the injury, when effusion into the cavity of the thorax took place and the patient died.

"Up to the last week of his life he was accustomed to walk to the water-closet, which was on the same floor with his bed, and was never assisted in taking food, even though lying on his back; and no evidence was ever afforded to those around him that motion or sensation, with the exception already named, was in the slightest degree impaired, neither had the difficulty of swallowing materially increased."

Permission could be obtained only to examine the back of the neck.

"The condyles of the occiput still rested upon the articulating surfaces of the atlas, but the atlas was found to be, not a separate and independent vertebra, but an appendix to the axis. So much of its anterior portion, as includes the surfaces by which it is articulated with the occiput and with the axis, had been violently separated from the posterior portion of its ring, and had been carried in an oblique direction downwards and forwards, until it arrived upon the same plane, but an-

terior to the axis, to the body and transverse processes of which it became attached by perfect bony union, whilst the posterior fragment had suffered no displacement. Under these circumstances the bone presented two spinal foramina, and four transverse, but no odontoid process. This organ having been fractured and separated; no organ passed through the anterior spinal foramen."

A notice is presented of two cases of fracture of the atlas recorded by Sir A. Cooper. In two points of view the case before us is not wanting in importance;

"As an example, namely, of the extent of injury which may be experienced by this portion of the spinal column, without harm to the important organ whose natural protector it is, or even to the economy: and as a reason for rescinding the dicta that 'a fracture of the processus dentatus proves instantly fatal,' and 'that a fracture of the cervical vertebræ, above the third, with considerable displacement, is almost immediately fatal.' "

6. *Some particulars of a case in which the patient was saved from the destructive influence of opium, by artificial respiration.* By CHAS. I. SMITH, Esq., Assistant Surgeon in the Madras army.—The patient was a female, 25 years old. Four hours after she had become insensible from the effects of opium, her extremities were cold and livid; lips and face of a dark lead colour; the pulse fluttering and scarcely perceptible; the respiration three or four times in a minute, with sighing. The stomach was carefully washed out by means of the stomach pump, after which small quantities of ammonia combined with brandy were injected. The spasm of the œsophagus was so great, on attempting to introduce the tube of the stomach pump, as nearly to destroy it. The scalp was next entirely denuded of its hair, and several buckets of cold water were poured in rapid succession over it, the nostrils being at the same time stimulated with ammonia. The scalp was now rubbed with liq. ammonia, until the whole of it was vesicated. All these means produced, however, but little or no effect in rousing the patient from her state of stupor. The pulse had entirely disappeared at the wrist, and only a slight irregular action of the heart indicated that life was not quite extinct. It was now determined, as the only remaining chance, to try the effects of artificial respiration.

The mouth and one nostril being closed, a pair of common bellows was applied to the other nostril, and the chest was in that way inflated, and alternately emptied by pressure on the chest and sides. This was continued for an hour, without intermission, at which time the heart seemed to be rallying, but if left to itself it rapidly sunk again. An ounce of the ol. terebinth. was injected into the rectum; bottles of hot water were applied to the chest, and sinapisms to the feet and legs.

This treatment was continued for about two hours and a half, with only slight intermission. The patient at this time was so evidently rallying, that it was deemed safe to leave her. At the termination of another hour she was found relapsing into her former state. Artificial respiration was again resorted to, and continued for two hours. The pulse had then become regular, and the patient made slight attempts to move, and showed evidence of pain when pinched. She became eventually well, and has since been married.

"It was curious to see the effects of artificial respiration in this case. The livid colour of the face and extremities, rapidly giving way to a more florid hue on every inflation, and again as rapidly returning to its original colour on being left for a few minutes."

7. *Remarks on two forms of atrophy of the heart's valves, which interfere with their function: founded on a series of cases.* By P. N. KINGSTON, M. D.—The first of these lesions is "a simple shortening of the heart's mitral or tricuspid valve, without any diminution of its natural thinness, pliancy and transparency: the orifice to which it belongs possessing at least the ordinary calibre. In other words, it is an atrophy of the valve in the direction of its length." In one case, the length of the superior lamina of the mitral valve, which is naturally from seven to nine lines, was reduced to three; in another it no where exceeded a

line and a half, and was for the most part only a line. The laminæ of the tricuspid valve are naturally from eight to eleven lines in length; but in one case they all three fell very far short of this, and one was only three lines. The valves in question are also generally thinner than natural.

The other lesion nearly allied in its nature and effects to the foregoing, consists in the continuity of the valve being interrupted by apertures, sometimes of large size, and sometimes so numerous as to reduce the structure to a mere net-work, while the remainder is in a state of attenuation, which is here and there often extreme, especially toward the edges of the apertures. Sometimes a large gap is seen, subdivided only by a few thready fibres. These, in the case of the auriculo-ventricular valves, are generally prolongations from chordæ tendinæ.

"It now and then happens that valves which have become thickened and indurated in various ways, are shortened or cribriform."

Dr. Kingston considers that these lesions are far from being rare lesions in comparison with the others to which the heart's valves are subject. The reason they have been so much overlooked is from their being above all others likely to elude observation, until the attention has been once directed to them. If the valves are lying down against the side of the ventricle or artery without any deviation from the natural appearance except a diminished extent of surface, this defect may easily escape notice. It is indeed often necessary, before it can be accurately ascertained, to cut the chordæ tendinæ and lift up the valve under examination.

Both the lesions described prevent the valve from closing completely the orifice to which it belongs; and hence it permits that regurgitation which it was placed to prevent. The effect must be obviously to weaken the force with which the blood is propelled through the arterial system, and to favour its accumulation posteriorly to the affected valve. This will be in a great measure proportioned to the extent of the valvular deficiency and to the size of the corresponding orifice. When dependent on shortening it will also be liable to increase from bodily exertion, mental emotions, and other causes by which the heart's action is stimulated.

"From this disablement of the valve will hence arise a strong tendency to dilatation or hypertrophy of those parts of the heart posterior to the valve affected; palpitation, venous congestions, anasarca, and effusion into the serous cavities; and where the mitral or aortic valves are defective, to dyspnœa and cough, to pulmonary congestion and inflammation, and to some of those symptoms which are apt to arise from deficient and irregular supply of arterial blood to the head and remote parts of the body. At the same time it may be presumed that the degree of tendency to the production of these affections, is less than that of those diseases of the valves, which not only permit regurgitation, but likewise by narrowing the orifice, obstruct the passage of the blood in the natural direction.

"These two species of atrophy sometimes co-exist or are combined with other defects of the valve or its orifice: and then, though each be slight, their united influence may be considerable."

In all the cases adduced by Dr. K. in which the circumstances are fully detailed, there had been anasarca and palpitations; and in all but one, dilatation of some cavity posterior to the affected valve. In all in which the valves of the left side were defective, there had been dyspnœa and cough, pulmonary congestion and inflammations; the radial pulse and the precordial impulse were frequently irregular and unequal; and out of the only four of these cases in which the history is sufficiently known, one patient was very subject to attacks of faintness and debility, another to vertigo and epileptic fits, a third died in a fit of syncope, and the fourth, after total sleeplessness for a fortnight, sunk into a state of coma, which was fatal in a few hours. Where the defect lay in the mitral valve, the pulse at the wrist, compared with the beat at the heart,

was generally small and weak; and where in the tricuspid, there was distension, sometimes attended with pulsation of the external jugular veins; in those cases, at least, in which they were examined. In several, the symptoms could not have been fully accounted for, had these valvular lesions been overlooked.

"Further experience is required to show with precision, by what modifications of the heart's sounds these defects are characterized. But I am satisfied, says Dr. R., from the stethoscopic examinations which I made, and from many analogous instances of simple regurgitation, that a bellows sound is often produced during the reflux of the blood through the affected valve."

"The discrimination of these from the other lesions of the valves is a point of great nicety, on which Dr. K. is not yet fully prepared to speak."

It is possible these defects may now and then be congenital; but according to Dr. K. there are the strongest reasons for believing that in the greater majority of cases they occur subsequent to birth. In considering their causes, Dr. K. esteems the supposition of their being the result of ulceration, as highly improbable. In all the cases the valves presented appearances exactly opposite to those which attend ulceration: they were thinner, more pliant, and more transparent than natural, and the attenuation gradually increased towards the edges of the perforations. Appearances which are most characteristic of those species of absorption unattended with suppuration.

"Of these two species of absorption the apertures can of course be ascribed only to the progressive; and in two cases, at least, in which the valves were both shortened and cribriform, the shortening was most likely produced by the same process as the apertures, by a progressive absorption of a portion of the valve at its free edge.

"The remote causes of these lesions remain to be investigated. In nine out of the ten instances in which the mitral or tricuspid valve was shortened, there was hypertrophy of the corresponding ventricle, which is in general preceded, as well as attended, by an increased force of the heart's contraction. In several, there was likewise obstruction to the discharge of the blood from the hypertrophous ventricle. In most, the patients had followed laborious occupations; and two traced their complaints in a great measure to over-exertion.

"In these nine instances, therefore, the blood's impulse against the valve affected had been permanently increased, and the valve had hence been subjected to an unnatural degree of pressure, an agent very frequently observed to occasion the atrophy of almost every tissue and organ in the body."

To prove the latter proposition Dr. K. adduces numerous facts.

"There can, therefore, he concludes, be no doubt that in the cases at present under consideration, the undue force of the blood's impulse against the valves may have been powerfully instrumental in promoting their atrophy. It could not, however, have been singly sufficient; for in some cases it has not at all impeded their nutrition, and in others it has been followed by an opposite change to that now considered."

"The undue force of the blood's impulse, therefore, in order to atrophize the valve, must have been assisted by some other cause. In the nine cases at present under review, the only cause that can be supposed is a debility of the valve's nutritive powers, in consequence of which its nutrition was obstructed by a degree of pressure which, had these been vigorous, they would have been able to withstand."

"In five out of the nine cases, marks of chronic disease were exhibited either by the pericardium, by some of the other valves, or by the inner membrane of the heart or aorta. In these five the valvular atrophy was probably consecutive on disease, with which the valve had been affected at the same time."

As our desire is to present to our readers with merely a brief outline of the author's views, we pass over the arguments and illustrations by which these are enforced.

In regard to the causes of the cribriform atrophy, of which there were five

cases, in one of which the pulmonary and aortic valves were both affected; and in two the auriculo-ventricular valve was shortened as well as cribriform.

"One of these patients had been very subject to gout and to precordial palpitations; and two had had several attacks of acute articular rheumatism, attended with well marked symptoms of inflammation of the heart; and, after death, exhibited old adhesions of the pericardium, and disease of some of the valves similar to that which is known to be consequent on rheumatic affection of the valves."

Dr. K. next attempts to show that gout and rheumatism are liable to so impair the nutritive powers of a part, in particular constitutions, as to render it liable to be absorbed, under the degree of pressure to which it is naturally subjected, and still more certainly when subjected to an augmented pressure.

In two of the three cases particularly referred to, the heart's muscular substance presented a singularly pale, friable, flabby condition, unequivocally proving extreme languor of nutrition; and in one of these, there was a deposition of fat by the side of the cribriform valve, strengthening the analogy between this atrophy and the atrophies of other organs depending on failure of nutrition. In the remaining two of the five cases, the cribriform atrophy was referable to the same causes as have been assigned for the shortening.

"From what has been said of their causes, we may expect to diminish the frequency and severity of these lesions by avoiding those circumstances which are known to encourage inordinate action of the heart, and by studying to prevent the metastasis of gout and rheumatism of the heart, and to improve its treatment when it occurs."

"The diagnosis of these lesions, even so far as to know that there is *some* valvular defect obstructing the circulation, will be highly advantageous to the patient. If the lesion be undetected, the symptoms will be supposed to indicate some other disease, as hysteria or dyspepsia; and hence a wrong opinion will be pronounced in regard to the future progress and the termination of the case; and, what is more material, the appropriate remedies will be neglected, while others, calculated perhaps to injure the constitution and increase the real disease, will be exhibited.

"It is generally agreed that, in valvular disease, the more distressing and fatal symptoms with which it is often attended, do not occur until the supervention of hypertrophy and dilatation. By a judicious employment of remedies, and regulation of the patient's habits, these consequences may often be warded off for a long term of years. The means adapted to this end need not for the most part be specified, as they are identical with the palliative treatment of the other purely mechanical valvular lesions. But," Dr. K. remarks, "while great muscular exertion is of all things the most injurious, a good deal of very gentle exercise, by determining the blood to the remote parts, and relieving the heart and great vessels of their distension, is in many cases highly beneficial."—"It is not unlikely, that if the heart's action can be kept tranquil, and the quantity of the circulating fluid be reduced, the orifice and cavities to which the defective valve belongs, may gradually diminish in calibre, so as to become adapted to the altered size of the valve."

8. *A Case of unusual Dislocation of the Thigh-bone, with observations.* By Benj. Travers, Jun.—In this case the thigh-bone was dislocated upwards. It occurred in a sailor 19 years of age, who fell into the hold of a ship, the left buttock striking upon a coil of chain cable, from a height of about twenty feet.

The limb, on raising him, was immoveable, everted and considerably shortened; a complete retention of urine followed the accident, but the bladder recovered after the lapse of two days, though the secretion remained turbid for some time. He landed in England four months after the accident, when two attempts were made to reduce the limb without success. He states that he met with many severe falls on first attempting to move from his hammock, at the distance of eight weeks from the time of the injury. He used to slip up and tumble backwards, with the leg of the affected side under him. Eight months from the occurrence of the dislocation the appearances were as follows:

"The left buttock is flattened; the trochanter is felt rather below, and to the outer side of the anterior and superior spinous process of the ilium. The neck of the bone lies apparently between the two anterior spinous processes, so that, when the patient is erect, the limb appears slung or suspended from this point. The head of the bone cannot be felt; it is invested by an abundance of bony matter, which extends backwards and inwards over the brim of the pelvis and iliac vessels, occupying in front, nearly the whole space between the inferior spine of the ilium, and that of the pubis, respectively. There is complete eversion; slight mobility; and imperfect progression with the aid of a crutch."

From the space we have already occupied, we regret to find that we shall be unable to conclude our notice of the volume before us, in the present number. We shall, therefore, close here for the present; deferring until our next an account of the remaining papers, many of which are extremely valuable, and claim a somewhat extended analysis. D. F. C.

ART. XVI.—*Recherches sur l'Emphysème des Poumons.* Par M. Louis, Médecin de la Pitié, Member de l'Academie Royale de Médecine, &c. &c.
Researches upon Emphysema of the Lungs. By M. Louis, Physician of La Pitié, Member of the Royal Academy of Medicine, &c. &c.

The above essay forms part of the memoirs of the "Medical Society of Observation" of Paris, the first volume of which has just appeared. Previous to the time of Laennec, pulmonary emphysema was almost unknown, and even since that period but little has been done to improve its history as given to us by that author. The work now before us, however, contains much new and valuable matter, and gives to the subject great additional interest and importance. The author's conclusions are based upon an examination of the histories of ninety cases of the disease, the greater part of which were observed by himself in the hospital of La Pitié. For some of them he is indebted to our countryman, Dr. J. Jackson, jun., of Boston, who, when in Paris, devoted much of his time to the investigation of this subject. Dr. Louis has published only a few of these cases in detail, but has given us a strict analysis of the whole. He has advanced but little that was not directly deducible from the facts before him, and based upon numerical data. This method of analysing medical cases may be said to have originated with him, and through its means the general results of clinical observation have assumed a high degree of accuracy to which otherwise they never could have attained. This system, although strongly opposed by many, is gradually gaining ground, as will appear by referring to several recent publications. It has been adopted by Andral in the last edition of his Clinique, as well as by Chomel. Even Bouillaud has given in his adhesion, and undertaken its defence in a late work, entitled "An Essay on Medical Philosophy, &c." We only regret that his feelings did not allow him to give to Dr. Louis the credit of being the first to carry out this system in practice, and urge its claims upon the attention of medical men.

Our author first gives a general description of the disease and of the appearances after death. He then proceeds to a separate consideration of each symptom and lesion, establishes the diagnosis, and concludes with some observations upon the causes, the frequency and the treatment of the disease.

We shall first consider his account of its

Anatomical characters. These are derived from the examination of the bodies of forty-two patients who died, more than half of whom were victims of the cholera. That portion of the lungs which was the seat of the disease, i. e. of the dilatation of the vesicles, was found to yield less easily to pressure than in the

natural condition; and its tissue also was thickened. This circumstance had been already noted by Laennec, but it further appears from the observations of our author, that this thickening is owing to a hypertrophy of the walls of the vesicles. That this is the case may be shown by direct experiment. It is also in accordance with a general law of our economy, that all membranous tissues become thicker in proportion as they are dilated from any cause. Dr. L. thinks that the dyspnœa which forms such a prominent symptom in the disease before us, can hardly be accounted for in any other way than by regarding it as the result of the influence which the hypertrophy of the vescicles must necessarily exert upon the reciprocal action between the air and blood in the lungs. It is possible that the dyspnœa may be in part owing to this cause, but it seems to us that it can be accounted for at least equally as well in another way. An emphysematous lung contains more air than a healthy one, and remains permanently distended, so that during each inspiration a less amount of air is taken in than natural. As the quantity of fresh air introduced into the lungs during each inspiration is diminished, it is clear that the conversion of venous into arterial blood, must be retarded; and hence dyspnœa must be the necessary consequence. The extent of the emphysema was very various. Sometimes it affected the whole of both lungs, and at others a part only of one. The extent to which it existed, appeared to be in proportion to the duration of the disease. Both sides of the chest were found to be equally liable to it. The degree of dilatation of the vesicles was always very various in the different parts of the lung. Generally, it was greatest upon the internal surface, or at the base, and especially along their free border. This fact is regarded by M. Louis as particularly worthy of note, because it seems to show that this affection is independent of pulmonary catarrh, or at least that form of it which attacks the smaller ramifications of the bronchial tubes, and gives rise to a subcrepitant râle. Adhesions between the opposing surfaces of the pleura were found in thirty out of thirty-six cases, but they were never universal, and generally occupied either one side only, or a small part of the lungs. This condition of the parts does not differ a great deal from what is usually found in the examination of bodies not tuberculous, and Dr. L. regards it as being in nowise the result of the emphysema, since the individuals in question were generally well advanced in life, and the adhesions were found as usual at the posterior part of the lungs, whilst the anterior portion was most subject to emphysema. Besides, no adhesion whatever existed in two out of the three cases in which the emphysema had arrived at its greatest height. The bronchial tubes were not more frequently dilated in this than in other diseases. From all this, Dr. L. thinks that it is evident that inflammation of the surrounding parts does not operate as a cause of dilatation of the vesicles, and also that the latter has no influence in producing the former. In sixteen out of the forty-two cases, the heart was augmented in volume. This augmentation is considered as a consequence of the emphysema.

Symptoms.—The first in order and the most important is dyspnœa. Of the patients who left the Hospital more or less relieved, forty-four were carefully examined with reference to this symptom, which was absent in only two cases. It was permanent, and never completely disappeared after the period of its first developement, except in a solitary instance. In some it showed itself during childhood, as was evinced by their inability to run as fast as their companions of the same age, without being quickly put out of breath. In the greater part it commenced much later in life, but in three cases only after the age of fifty years. Hence Dr. L. concludes that the liability to the disease is very slight in persons who are over fifty. Whether this be so or not, we cannot undertake to determine; but at the same time are inclined to think that the facts brought forward by our author are insufficient to prove it, because it must be recollected that the number of aged persons admitted into his Hospital are, comparatively speaking, few in number. The oppression, when first observed, was commonly

slight, and remained so for a long time in those cases where it showed itself at an early period; and in few did it become violent till after the lapse of a considerable length of time. In most it was subject to violent exacerbations, which sometimes occurred without any appreciable cause, but were generally the consequence of an attack of acute pulmonary catarrh. The importance attached to this symptom will be best enforced by quoting our author's own words.

"This dyspnœa, so remarkable on account of the period of its commencement, which was frequently during childhood, of its duration, its permanency, its frequent exacerbations, often unaccompanied with any of the other symptoms of disease of the heart; this dyspnœa, I repeat, was of itself characteristic of emphysema. It was impossible, in fact, to refer it to a simple habitual pulmonary catarrh, which was not present in all the cases where the oppression appeared after the age of twenty years or a little before; and which, moreover, with one exception, did not exist in any of those where the commencement of this symptom was referred to very early life. It could not be owing to a general or partial dilatation of the bronchial tubes; because, when the latter is accompanied with dyspnœa, this is mild, and especially not subject to exacerbations. In some cases, which were complicated with disease of the heart, this last was only of a few years duration when the patients came under our observation, and was very far from having originated during childhood. Finally, the absence of hæmoptysis, and of the other symptoms of tuberculous disease, would not allow us to attribute the symptom in question to phthisis; so that the mere existence of dyspnœa, possessing the characters which have been described, might of itself be sufficient to discover, and has in fact often been the means of discovering, emphysema of the lungs."—pp. 185–186.

In those who died, the characters of the dyspnœa were found to be very much the same as in the foregoing series of cases.

Form of the chest.—This was uniformly altered. There was an unnatural prominence, which occupied a surface of limited extent, and was generally confined to one side. In one case only was the chest distended throughout, and here it presented more or less of a globular form. The prominence alluded to usually commenced under one or other clavicle, and extended downwards about as far as the nipple. At the same time the usual hollow above the clavicle was more or less obliterated on the same side, and sometimes even its place was supplied by an absolute prominence.

This double prominence, which is found only in emphysema, has enabled me to recognise this affection in more than one instance, when a further examination has confirmed the diagnosis."—Memoirs, p. 198.

The description of the conformation of the chest is much more accurate than that given by any preceding writer. Laennec speaks merely of a general enlargement either of the whole chest or of one side.

The respiratory murmur was found to be more feeble than natural. This feebleness, although not confined to that part of the chest which was prominent, was, however, most marked there. The same was observed of the resonance on percussion, which was greater than natural. Besides the sibilant and sonorous râle, one or other of which existed in every case, there was found in many a subcrepitant râle at the inferior part of the chest behind. This râle was indicative of acute pulmonary catarrh, with which most of the patients were attacked shortly previous to their admission into the wards. The uniform seat of this râle, when existing as a sign of acute catarrh, is, as has been just mentioned, the posterior inferior portion of the chest.

"This law of its developement is moreover important, inasmuch as it seems to indicate that emphysema, which is generally found greatest near the free border of the lungs, is independent of pulmonary catarrh, at least in its acute form, and it increases the number, already considerable, of facts which show the wide difference which separates catarrh and tubercles."—p. 218.

That emphysema is not dependent upon the form of acute catarrh above alluded to is very probable, but at the same time we are not aware that any one ever supposed that it was so. On the contrary, it is to dry chronic catarrh that Laennec especially attributes its production.

Pain in the chest occurred in about half of those cases which were carefully examined with reference to this point. Its seat was almost always (13 times out of 15) in that part of the chest which was unnaturally prominent. Laennec does not speak of it.

"These (the pains) were not increased either by inspiration or coughing, and hence cannot be attributed to chronic inflammation of the pleura. Moreover their seat was generally the anterior part of the chest, which corresponds to that portion of the lung which is found most free from adhesions in emphysemas as well as under other circumstances, unless where the adhesions are general. It is equally impossible to refer the pains above spoken of to extension of the thoracic parietes, as this extension, when it is the result of mere effusion not consequent upon inflammation, is not accompanied by pain; and as this symptom existed thirteen times out of fifteen, not only on the same side with the prominence, but in the precise spot which it occupied, we are absolutely obliged by the process of exclusion to refer it to the dilatation of the vesicles themselves."—p. 225.

Nevertheless our author does not regard the conclusion as established, because he thinks that it requires a greater number of facts to determine the question positively.

Palpitation of the heart and œdema of the lower extremities were found in a considerable proportion of cases; but these symptoms did not commonly appear until after the disease had been long established. In most of those who died after having experienced permanent palpitation, the heart was found enlarged. Where œdema of the lower extremities had existed, the same condition of it was uniformily observed; and, on the contrary, where œdema did not exist, hypertrophy was never found. "Hence it necessarily follows, that œdema developing itself during the progress of emphysema of the lungs, should not be referred to this latter disease, but rather to an organic affection of the heart." It is evident, from what has been stated above, that permanent palpitation and œdema must not be regarded, strictly speaking, as symptoms of emphysema, but rather as indicative of that condition of the heart which so frequently complicates it. Moreover it is plain, that the hypertrophy was a consequence, and not a cause of the disorder of the respiratory function, because the dyspnœa existed long before the symptoms of cardiac disease made their appearance.

With one exception the patients lost neither flesh nor appetite, except for a short period during the existence of an attack of acute catarrh accompanied with a paroxysm of dyspnœa.

Having investigated each symptom separately, our author proceeds to consider the diagnosis which he establishes with that rigorous exactness which characterizes most of his observations, and especially those which refer to the distinguishing character of disease. He institutes a comparison between the symptoms of emphysema and those of other diseases with which it might be confounded, such as catarrh, dilatation of the bronchi, aneurism of the aorta, organic affections of the heart, &c.; and shows most clearly wherein it differs from each of them. We could not do justice to this portion of the paper unless we gave it entire, which would take up too much space. From what has been given above, however, the reader will readily discern the most prominent points of difference. The course of emphysema is essentially chronic, remaining stationary in many cases for a number of years, without giving rise to any very violent symptoms. In other cases, however, the disease was marked with considerable severity at its outset, but still its course was very protracted. In a few exceptional cases only, its progress would seem to have been very rapid. A remarkable instance of this kind is selected by our author, in which the dis-

ease arrived at a fatal termination one month after the date of the attack. Here, however, death was not caused by the emphysema alone, for at the same time there existed dilatation of the bronchial tubes and tuberculous depositions, the origin of both of which, however, appeared to be coeval with the dilatation of the vesicles.

Upon the causes of the affection but little additional light has been thrown. Laennec supposed, that in a great majority of cases, it was a consequence of chronic catarrh. This, however, Dr. L. does not admit. He says that,

"Setting aside those cases where the dyspnœa commenced in very early life, and in which cough did not generally supervene till a much later period, the oppression was far from being always preceded by pulmonary catarrh, as has been previously stated; and in several cases this latter did not show itself until one or more years after the occurrence of oppression. Hence we must admit the following conclusion, viz: that emphysema may and in fact does not unfrequently arise independent of pulmonary catarrh."—p. 253.

Laennec himself states, that in some cases the dilatation of the cells appeared to be primitive, and the catarrh consecutive. But certainly it does not hence follow that emphysema may not owe its origin to chronic catarrh in a number of instances. Indeed some of the facts recorded by Dr. Louis seem to us to be in favour of this conclusion. Setting aside those cases in which the difficulty of breathing existed during childhood, this symptom was either preceded or accompanied at its commencement with cough in every case, except two. As regards those cases in which the dyspnœa is said to have occurred during childhood, it must be recollected that it was then exceedingly slight, being indicated merely by an inability on the part of the subjects of it to run as fast as their companions of the same age, at least, without being quickly put out of breath. Granting that slight dilatation of the pulmonary vesicles was then present, it seems to us that this could hardly be regarded as strictly anormal, and was, perhaps, in some cases only the result of their original conformation; for it was unaccompanied by any other symptom attendant upon emphysema in after life. But without insisting upon this, it is clear that pulmonary catarrh either preceded or accompanied the first signs of emphysema in the great majority of instances. It is worthy of note too that the only cases, (two in number,) in which dyspnœa was absent, were also free from habitual catarrh. Most commonly also the violent exacerbation of oppression which forms such a prominent feature of the complaint, coincided with an attack of acute pulmonary catarrh. That the symptoms of catarrh were not always permanent, or were not at all times present throughout the whole course of the disease, is no argument against the views we are supporting, for the cells being once dilated, difficulty of breathing, to a certain extent, would necessarily remain, although every sign of catarrh had entirely disappeared for the time. Indeed the circumstance above mentioned is in our favour, for it shows among other circumstances, as our author himself affirms, that cough is not a necessary symptom of emphysema, and hence it is the more astonishing that it should so very frequently accompany the commencement of the disease, unless we regard it as a cause and not a consequence. It is stated by Laennec that, in dry catarrh, the small bronchial tubes are often completely obstructed either by a pearly expectoration, or by swelling of their mucous membrane. He thinks that this state of parts gives rise to dilatation, by causing, during expiration, the retention of the air which had overcome the obstacles opposed to it during inspiration. Our author is of opinion that this explanation is not in accordance with the facts which he has observed, and that it is at variance with the following observation which he has made, viz: that the pulmonary vesicles were always found empty. This, however, does not in the least affect the question, for it is not the vesicles but the small bronchial tubes which are obstructed, according to the statement of Laennec. Of the condition of the latter, Dr. Louis, by a singular oversight,

has said nothing. We are far from regarding the views of Laennec upon this subject as clearly established; for, until the question shall have been farther investigated, it would be difficult, perhaps, to come to a positive conclusion. With all due deference to the authority of Louis, we must, however, observe that we do not think that the facts which he has adduced, establish the views which he has taken of this question.

The hereditary nature of emphysema seems to be clearly made out. Of twenty-eight patients affected with it, and from whom accurate information could be obtained in relation to the point in question, eighteen were born of parents one or other of whom had been subject to the disease. For the facts tending to establish this point, Dr. Louis is chiefly indebted to his late pupil J. Jackson, jr. There is only one source of doubt attaches to them, which is the difficulty of being perfectly sure that the parents of the patients referred to were really affected with emphysema. For they were regarded to have been so whenever it was found that they had been subject to great difficulty of breathing coming on by paroxysms, and accompanied by emaciation, &c. Now, although it is probable that the larger part of them were really affected with emphysema, we cannot, with the knowledge which we at present possess, admit that they all were so.

The disease, according to our author, is a very frequent one, and in proof of it he mentions, among other circumstances, that the cases which he has analyzed, in the memoir before us, were collected for the most part in the short space of twenty months.

Regarding the causes of the disease to be unknown, he says but little in relation to the prophylactic treatment, recommending merely the avoidance of the common causes of disease in general, and of that of the lungs in particular, and especially of those circumstances which are calculated to bring on paroxysms of oppression, and augment the symptoms of the disease when established. He alludes particularly to the inhalation of an atmosphere charged with dust, deleterious substances, moisture, &c. As regards the curative treatment, he has but little confidence in the efficacy of polygala, squills, &c. which were so much recommended by Laennec in relieving the pulmonary catarrh which accompanied the disease. He thinks that they do not diminish dyspnœa and favour expectoration, as has been said. Loss of blood he looks upon as equally inefficacious under the same circumstances. He has found but one substance which exerted a decided influence upon the dyspnœa, and that was opium.

"One medicine only, and that has been mentioned by Laennec, had a happy influence upon the dyspnœa of a large part of those patients affected with emphysema, whose histories I have collected; I mean opium in every form. Almost all those to whom I gave it experienced decided relief, (twenty-six out of thirty of those in whose history I had carefully noted down the phenomena which followed the administration of the medicine) and the violence of the symptoms returned as soon as the use of it was suspended, unless in cases where they had been reduced for a considerable length of time."—p. 259.

When the disease is complicated with hypertrophy and dilatation of the heart, the treatment requires some modification, but even here Dr. L. says that v. s. should be cautiously employed, as the dyspnœa is owing, in great measure, to the emphysema, which is not relieved by sanguine emissions.

From the sketch which we have given of the most prominent features of the memoir before us, it is evident that the profession is indebted to its author for very material additions to their previous knowledge of the affection of which it treats. His conclusions are, generally speaking, so clearly established, that we are obliged to admit their correctness. In examining the evidence upon which they rest, the reader feels assured that he has arrived at something real and tangible—that he has been made acquainted with positive scientific truth, and not with mere conjecture and supposition. This character of, I had almost said, mathematical accuracy, is peculiarly characteristic of the writings of Dr.

Louis. This is one of the beautiful results of the system which he has adopted, and we cannot conclude without repeating that to him most undoubtedly belongs the credit of having applied it to the investigation of morbid phenomena.

T. S.

Art. XVII. *Du traitement curatif des varices par l'obliteration des veines, à l'aide d'un point de suture temporaire.* Par M. Davat. Paris: 1836. 8vo.
On the treatment of Varices by obliteration of the vein, by means of a temporary ligature. By Mr. Davat.

Varicose veins are looked upon by many as a complaint of little interest, but the frequency of their occurrence, and the constant solicitations made by those labouring under them for a radical cure, should alone be sufficient to induce the practical surgeon to devote his serious attention to the subject.

To procure the obliteration of the cavity of the vein, is the end proposed in all operations for the cure of the disease, and hitherto has been arrived at in one of three ways, viz: by the ligature, by simple division of the vessel, or by the removal of a portion of it. Each of these methods has had its advocates and decriers, and each in turn has been the favourite one for a time; but experience has shown them all to be so dangerous, that surgeons look upon the performance of either of them as an operation of a most serious nature. Under such circumstances we hail with much pleasure the memoir of M. Davat, bringing forward a new operation for their cure, equally, if not more certain in its results, at the same time that it exposes the patient to infinitely less danger.

The little work before us is divided into three parts. In the first, the anatomy of the superficial venous system of the limbs is treated of. In the second, the different modes in which obliteration of veins may take place is described, as well as the various operations practised for the cure of varices; and in the last is an exposition of the new method of operating, and reports of a number of cases in which it has proved successful. Our notice will be confined to the two last parts only, the first containing nothing that is not already well known to the profession.

By the obliteration of a vein, M. Davat understands its conversion into a white, solid, ligamentous cord; he does not look upon it as *obliterated* when its cavity is obstructed by a fibrinous mass only, as this latter is always temporary, and is invariably removed after a time by absorption.

From experiments performed by himself, he is led to conclude that the obliteration (as he understands the term) of a vein after operations, takes place either from thickening of its coats or from union by the first intention of its internal membrane. The application of a ligature to a vein, does not cause a division of the internal membrane, as in the arteries, but merely excites effusion into the cellular coats of the vessel, and in this way produces thickening of its parietes, and consequent obliteration of its cavity.

The following he states to be the phenomena which occur after a ligature is put upon a vein. 1st. There is an increased quantity of blood carried to the surrounding parts. 2nd. There is an effusion of coagulable lymph in the cellular tissue around the vessel. 3d. The internal membrane contracts, and is thrown into folds by reason of the pressure upon it, but retains its natural colour and thickness, and presents no exhalation of lymph upon its surface. 4th. If the ligature remains until sufficient lymph is effused in the cellular sheath of the vessel to obstruct the circulation, the clot which is shut up is absorbed, and the vein diminishes in size and is entirely obliterated somewhere between the fourteenth and seventeenth days. But if the ligature is thrown off before a sufficiency of lymph is deposited, the folds of the internal membrane become ef-

faced, and the vein, after a short time, again attains its ordinary calibre. In cases where high inflammation arises, the vessel ulcerates, and the ligature becomes loose, so that the ends of the vessel remain open, and either give rise to hemorrhages or else to a phlebitis, which will terminate by suppuration in its interior without causing obliteration of any part of it. The conclusion drawn from these experiments is, that the internal membrane of veins does not throw out lymph after the application of a ligature, as is the case with arteries, so that by this method of operating we can never produce union of their parietes by the adhesive inflammation, but only obliteration by effusion into the surrounding cellular membrane; an obliteration which is uncertain in its ultimate results, requiring a long time for its production, and which is always dangerous and often fatal.

It will be acknowledged by all, that primitive adhesion of the internal coat of the vein is, the result of all others, the most desirable. The attainment of this our author affirms to be impossible by any operation, unless the coats of the vessel be in some degree divided, and its opposite sides kept in contact long enough to admit of the deposit of coagulable lymph, which will take place around the points irritated, and after four or five days become firmly consolidated. The object then, which he proposes, is to wound the internal membrane *slightly*, so as to ensure this exhalation of lymph and its consequence, union by the first intention; and the mode in which he accomplishes this is ingenious, at the same time that it is easy of execution. The patient being properly placed, a band should be applied tightly to the thigh, just above the knee, for the purpose of rendering more prominent the vena saphena. A fold of the skin, including the vein, is then to be pinched up with the left hand, at the usual place of operating below the knee, and a needle, either curved or straight, is to be pushed transversely behind the vein, for the purpose of isolating it from the deeper seated parts. The integuments are then drawn out and held tense by means of this needle, and a second one is made to penetrate successively the skin, anterior and posterior parietes of the vein, after which it is pushed upwards and forwards behind the first instrument, in such a way as to cause it to reappear at the surface a little above the place of insertion, after a second time passing through the sides of the vessel. The needles are then fixed in this situation by a figure of 8 ligature, moderately tight, and their ends removed with the nippers. Twenty-six cases have been treated by this new method, all of which, with one exception, have been followed by cure; and in all, but the one mentioned, without the occurrence of any dangerous or unpleasant symptoms.

So successful a practice should strongly recommend the author's mode of operating to the attention of every surgeon. Nevertheless, we are all so apt to be carried away by novelty, and to have our judgments biassed in favour of new methods introduced by ourselves or friends, and so often make facts bend to the support of our own favourite notions, that the value of the mode of treatment proposed cannot be justly appreciated, until it shall have been more fully tested by other practitioners. Examined coolly in the closet, the advantages which M. Davat's mode of operating offers over all others appears great, and would lead us to pronounce it an excellent one; and, we have given this notice of his memoir, in the hope of making his operation known, and of inducing surgeons in this country to give it an impartial trial, the results of which we hope to be made acquainted with. The operation is simple, demands no division of the skin, causes but little pain, at the same time that the cure takes place at an early period; while any other operation is painful, exacts a long incision of the skin, and even when followed by no bad symptom, requires a comparatively long period for the cure. G. W. N.

ART. XVIII. *De l'Influence des Saisons sur la Mortalité a différens ages.* Par M. le Docteur H. C. LOMBARD, Lu à la Réunion de la Société Helvétique des Sciences Naturelle à Genève, en Août, 1832.

De l'Influence des Professions sur la durée de la vie. Recherches Statisques. Par le Dr. H. C. LOMBARD, Médecin de l'Hôpital Civil et Militaire de Genève. Geneve, 1835.

On the Influence of the Seasons upon the Mortality at different ages. By H. C. LOMBARD, M. D. Memoir read at a meeting of the Helvetic Society of the Natural Sciences, at Geneva, in August, 1832.

On the Influence of the Professions upon the duration of life. Statistical Researches, by Dr. H. C. LOMBARD, Physician to the Civil and Military Hospital at Geneva. 1835.

The modern science of statistics seems destined to develope many important facts connected with almost every branch of human knowledge, and not a few which contribute to the solution of physiological questions formerly enveloped in obscurity. Among these last is the subject involved in the first mentioned memoir of Dr. Lombard, the immediate object of which is to determine the variations in the force of the vital powers at different ages, so far as it may be estimated from an exact reference to the mortality occurring at different seasons. The criterion referred to supposes, that when the number of deaths at a certain period of life is found to vary but little in different seasons, the inference may be fairly deduced that the vital powers exist in great energy, and oppose a strong resistance to the causes tending to promote mortality; whilst, on the contrary, a considerable variation taking place in the mortality at different seasons, affords reasons for concluding that the intensity of the vital powers is diminished.

The influence of temperature upon mortality has been ably investigated by Villermé and Milne Edwards, who confined their inquiries to the earliest periods of infancy, and by Quetelet, whose researches were extended to every period of life. The number of our Journal for November, 1831, shows the influence of the seasons upon infantile and adult life in Philadelphia, and presents results remarkably different from those of the European cities that have hitherto been subjected to similar statistical inquiries, especially those of Geneva, as estimated by Dr. Lombard. An examination of the calculations made for various localities, illustrates in a striking manner the destructive agencies predominating in each, as well as the periods of life when these manifest most activity.

The data upon which Dr. Lombard founds his calculations are drawn from the civil register of the city of Geneva, and comprises 17,623 deaths, distributed through 24 years. This number, it is true, must be regarded as too inconsiderable to place the results on the most incontestable footing, but still the accuracy and minuteness which mark the records go far to compensate for the disadvantage in numbers.

To be enabled to appreciate the influence of temperature upon human life at different ages with more precision, Dr. Lombard makes the following division into eight epochs, each of which he supposes to represent a different state of the vital forces.

1. From conception to birth, (still-born.)
2. From birth to one month, (newly born.)
3. From one month to 2 years, (first infancy.)
4. From 2 to 15 years, (infancy and adolescence.)
5. From 15 to 60 years, (vigour of life.)
6. From the 60th to the 70th year, (commencing old age.)
7. From the 70th to the 80th year, (confirmed old age.)
8. From the 80th to the 100th year, (caducity.)

Before noticing the mortality of the several periods, it may be proper to state

that the general mortality of the different months in Geneva, without any distinction of age, shows a very gradual increase and diminution—the minimum corresponding to the month of July, or the warmest month, and the maximum to February, or the period immediately following the greatest cold. Between these two extremes the increase and diminution of deaths is altogether regular, except that the first, which occupies seven months, takes place slowly, whilst the increase is marked by greater rapidity.

These results are in exact accordance with those observed by Quetelet in Brussels and other parts of the Netherlands, but they are precisely the reverse of the course of mortality as influenced by the seasons in Philadelphia and the neighbouring cities on the Atlantic coast, in which by far the greatest mortality takes place in the warmest period of the year. (See this Journal for November, 1831, p. 32.)

When we refer to the results obtained by Dr. Lombard's estimates for each of the periods he has established, we find that the number of still-born attains its maximum in winter, and diminishes regularly till autumn.

The influence of the changing seasons upon the mortality of the newly born, comprising infants from birth to one month, is shown by the fact that during the cold months the deaths are more than double what they are in the more temperate periods of the year.

The influence of temperature does not appear so well marked in the next period, which includes the mortality between the end of the first month and second year, and exhibits the greatest number of deaths in the autumn, whilst the minimum corresponds with spring.

Both of these results are strongly contrasted with those derived from similar calculations applied to our own locality. It must, however, be remarked, that the difference which exists in the division of the periods in the two calculations does not admit of a close comparison.

Between the 2nd and 15th years, the variations observed by Dr. Lombard are inconsiderable, and the vital powers seem to be sufficiently energetic to counterbalance, in a great degree, the influence of the seasons. The little variation observed in the mortality of the monthly periods, shows an increase in the autumn and spring.

In the period which Dr. Lombard designates the vigour of life, namely, between the 15th and 60th years, the maximum mortality corresponds with January, the coldest month, whilst the minimum is exhibited by July, or the warmest month.

After the 60th year, the influence of the seasons becomes more and more strongly marked. From the 60th to the 70th year the maximum and minimum monthly mortality correspond with March and July; the first being the most variable, and the last the warmest month in the year. When the periods are so arranged as to include the seasons, the greatest mortality is found during the winter and the least in summer. The difference between the two extremes is twice as great as in the preceding period.

Between the 70th and 80th years, the maximum monthly mortality corresponds with February, and the minimum with July; the winter being the season when the greatest number of deaths takes place, and summer showing the fewest victims.

The influence of the seasons upon aged persons in Geneva, is strikingly shown by the fact that a monthly comparison of the deaths exhibits two deaths of very old persons in winter for one in summer. The difference between the greatest and least mortality of the very aged, is four times greater than that observed in the period of life between fifteen and sixty years.

The observations of Dr. Lombard are accompanied by tabular statements, presenting the data and estimates formed upon them; from all which he thinks himself justified in concluding, that in Geneva the force of resistance opposed

to the deleterious influences of the seasons, is greatest in the middle of life, less intense between the age of one month and two years, and also from the sixtieth to the seventieth year; very feeble in the first month of life, and at its minimum after the seventieth year.

Among the practical conclusions which Dr. Lombard deduces from his calculations, are the following: The error of those who maintain that new-born infants can be exposed to cold with impunity; which leads him to disapprove of the common practice of exposing children for baptism, or on any other occasion, during the rigours of winter. Such exposure, he thinks, ought not to be made under six weeks, at least.

Another conclusion, of not less importance, is the necessity of preserving the aged from the extreme intemperatures of the seasons, since these suffer from the deleterious influence of cold and sudden changes, even more than infants.

"With old persons," Dr. L. remarks, "the spring and winter double the number of deaths, and it is to be presumed that a great number of them would have escaped danger had they known the source. Let not old persons, therefore, neglect warm clothing, on the first approach of the cold season. Let them sleep in a chamber kept at a proper temperature, and take care not to expose themselves to extremes of weather. Finally, let them be cautious in leaving off too soon their winter clothing, since we have seen that the spring presents a great many deaths of the aged."

We now proceed to the second memoir of Dr. Lombard, in which he examines the influence of professions upon the duration of life, an important subject connected with hygiene, which has been often referred to but never before investigated with the aid of statistical documents. The data upon which he founds his estimates, were furnished by the civil records of Geneva, and include the deaths of 8,488 persons of sixteen years and upwards, whose professions were designated. He exhibits a table in which these 8,488 individuals are distributed so as to show their several occupations, the mean duration of their lives, the number of deaths from accidents or violence, and the mean duration of life after deducting the deaths from accidents. The average of the whole number included in the estimate, is 55 years to each, and this constitutes the standard or mean term with which he compares the influences of professions favourable and those which are unfavourable, to the prolongation of life.

The last mentioned influences being by far the most numerous, are also the most important to designate, since it is more easy to avoid the offending causes by which the operative classes are surrounded, than to afford these the subsequent care necessary to their welfare.

Dr. Lombard makes a general division of the influences favouring the duration of life, into those which are associated with ease, and such as are connected with activity.

Some of the professions connected with the first division, show an average duration of life far above the mean of 55 years. As for example, magistrates, 69.1; annuitants, 65.8; protestant ministers, 63.8; merchants, 62; goldsmiths, 61.9; weavers, 60.5.

Such results would seem to sustain the conclusion of Finlaison, that the duration of life is very much the same in all those classes of society which have recourse to life insurances, it being of but little consequence whether the individual who insures be of a delicate or robust constitution, provided his circumstances enable him to procure a certain sum each year, and place it with an insurance company. But a view of M. Lombard's table, affords a very long list of exceptions to the general rule of Finlaison, many lucrative professions standing below the mean.

Dr. Lombard observes, that there are some professions which usually enjoy a certain degree of ease; others, on the contrary, where, in consequence of the moderate salaries or earnings, of the members, they are always left in limited

circumstances. There are, however, a large number of professions which ordinarily place those who exercise them in an intermediate state between ease and misery. This view of the subject induces him to classify the different states into three divisions; the first comprehending those in easy circumstances; the second, mechanics and tradesmen; and the third, comprising day labourers. We are pleased to find the medical fraternity occupying a pretty exalted place on Dr. Lombard's list of the liberal professions, the mean of life of our Genevese brethren being put down at 66.4. It further appears that one-third of the physicians and surgeons of Geneva, attain the age of 70, or beyond; one-eleventh die after the age of 80; and four-fifths live beyond the age of 50. This privilege of life, we are sorry to believe, is almost peculiar to the comparatively small locality embraced in Dr. Lombard's calculations. In Prussia, for example, the case is very different, as appears from a memoir published by M. Caspar, of Berlin, wherein he states that out of 624 deaths of physicians and surgeons, only a fourth attained the age of 70; scarcely one in sixteen, the age of 80; and that more than one-half died before attaining their fiftieth year.

M. Caspar furnishes the following list of professions where the members attained, or went beyond, their seventieth year. The number shows the proportion in the hundred deaths of each profession. Theologians, 42; agriculturalists, 40; lawyers, 29; physicians, 24. In Geneva, the theologians are in the proportion of 46; the agriculturalists, 27; the lawyers, 42; and physicians, 33, in one hundred deaths of each profession.

A comparison of the various tables given by Dr. Lombard, shows in the three classes last referred to, a difference between the poor and those living in easy circumstances, of seven and a half years, or about one-eighth of the whole length of life. The following table shows in a condensed form, the uniformity of this result, and the degree of influence exhibited in each of the three classes.

	Average of life above 55 years.
1*st. Class.*—Men in easy circumstances, -	62.2
	Under 55 years.
Ditto, - - - -	52.6
	Above 55 years.
2*nd. Class.*—Tradesmen, - - -	60.7
	Under 55 years.
Ditto, - - - -	50.5
	Above 55 years.
3*d. Class.*—Labourers and workmen, -	57.8
	Below 55 years.
Ditto, - - - -	49.6

From this view it appears that the duration of life is abridged in proportion as we pass from a class in easy circumstances to one less so. The greatest difference is perceptible between those in easy circumstances and tradesmen, and least so between the tradesmen and labourers.

"We may, therefore," says our author, "consider ease as exerting a very considerable influence upon the duration of life. It is now several years since Dr. Villermé arrived at a similar result, by pursuing a very different course of enquiry, with an entirely different population, in the course of which he showed that the mortality of the various quarters of Paris was rendered greater in proportion to the prevalence of ease, and life prolonged as the extent of misery was diminished."

The second class designated by Dr. Lombard, shows the influence of the active employments upon the duration of life. Those whose occupations are altogether sedentary live a shorter time than those whose labours are attended with exercise in the open air.

With regard to the influences unfavourable to the duration of life, Dr. Lombard gives the first place to the absence of ease and limited pecuniary resources;

circumstances which abridge life, according to his computation, one-eighth of the mean term.

The second influence unfavourable to life, is the existence of mineral or vegetable vapours or powders in the atmosphere surrounding the workmen, the agency of which is so much the more hurtful as the vapours are irritating. These reduce the average duration of life 4.9 years. With certain workmen, the effects are still more melancholy, causing many to fall in the flower of their age. The mean of life is longer with those workmen who are surrounded with the dust from animal matters, than with such as respire an atmosphere charged with dust derived from vegetable and mineral substances. This result is, however, according to Dr. Lombard's observations, contrary to what has been remarked in regard to phthisis, which is much more frequent with workmen exposed to the inhalation of dust produced from animal and mineral substances. He also informs us that an impure atmosphere tends much more powerfully to abridge life, when the matters held in suspension are in a state of vapour, so as to be absorbed by the mucous lining of the lungs, than where they are in the state of powder, however fine. The mean duration of life, is 51 for those subjected to vapours, and 53.5 for such as are exposed to powders.

The researches of Dr. Knight, exhibit the effects of these deleterious agents in a strong point of view.* This writer informs us that the workmen of Sheffield, employed in the polishing of steel, rarely attain to an advanced age. Out of 2,500 of these, scarcely 35 reach the age of 50; and only 70 live to 45. The greatest number die before their thirty-sixth year.

The degrees in which the favourable and unfavourable influences are exerted upon the population of Geneva, are thus summed up.

1st.—*Favourable Influences.*

Easy circumstances,	add to the mean	duration	of life,	7.5 years.
An active life,	do.	do.	do.	1.4 do.

2nd.—*Unfavourable Influences.*

Absence of ease,	deduct from the mean	duration of life,	7.5 do.
Mineral and vegetable vapours,	do.	do.	4.9 do.
Dust of various kinds,	do.	do.	2.5 do.
Accidents and violence,	do.	do.	2.3 do.
Sedentary life,	do.	do.	1.4 do.

The causes operating in the production of this order of longevity, are thus explained by the author. The magistrates, annuitants, ecclesiastics, retired officers, merchants, &c., occupy the first rank, as the result of the easy circumstances which they enjoy. The same cause operates in favour of the gardener over the farmer, and the merchant over the shopkeeper.

The gardeners, founders, and wood-choppers, are indebted to their active vocations for greater longevity than is enjoyed by writing masters, boxmakers, shoemakers, and tailors, which last are operated upon unfavourably by their sedentary habits.

Painters, varnishers, locksmiths, enamellers, toymakers, and cabinetmakers, occupy the lowest place in the scale of longevity from their constant exposure to deleterious vapours. Finally, life is abridged in a marked degree, among boatmen and postilions, by the accidents to which their employments expose them.

It must be observed, that several of the agencies alluded to counteract each other. It is thus that the sedentary life of some operatives is counterbalanced by their state of ease, whilst the active habits of the wood-cutters tend to diminish the effects by which their poverty would otherwise be followed. A

* See his paper on Grinder's Phthisis, North of England Medical and Surgical Journal, for August and November, 1830; also this Journal for November, 1831, p. 248.

certain number of professions would, therefore, occupy very different positions in the scale of comparative mortality, if they were only subjected to the operation of a single influence. G. E.

ART. XIX. *Practical Observations on the Venereal Disease, and on the Use of Mercury.* By ABRAHAM COLLES, M. D., one of the Surgeons of Dr. Steevens's Hospital, and lately Professor of Surgery in the Royal College of Surgeons, in Ireland. London, 1837, 8vo. pp. 351.

The name of Colles, so eminent from its surgical associations, is, we fear, not destined to be raised higher by the work he has just given us. We have not as yet had an opportunity of minutely examining it, nor do we feel any anxiety to do so, after the revelations which a rapid glance has afforded. We have seldom, if ever, met with a book from which some useful instruction was not to be gained, although its extraction has often been attended with the sacrifice of time and pains not adequately rewarded. Such, we fear, would be the result of a close sifting applied to the work of Mr. Colles, the obsolete and heterodox opinions spread through which are by no means atoned for by the valuable facts and interesting cases here and there to be met with. The profession has had a long struggle to disengage itself from some of the old dogmas, and have happily succeeded in a great degree. Dr. Colles, however, would bring it almost back again to the lessons of Hunter. Witness the following opinions relative to the administration of mercury.

"When mercury is exhibited for the use of any other disease, as well as syphilis, we shall find that its sanitory impression on the disease is contemporaneous with its action on the salivary system, and that when the latter effect has not been produced, neither will the former have occurred. If, then, it be so very generally found, that whenever mercury exercises a salutary influence over disease, it at the same time always affects the salivary organs; and if, again, whenever it fail to produce this latter effect, it be also found altogether inoperative in the cure of disease, it is surely a fair and legitimate conclusion to affirm that ptyalism marks the natural and salutary operation of this mineral."

The efficacy of mercury was formerly estimated by the amount of salivation which it excited. Thus, certain venereal symptoms were thought to require a salivation of one pint a day; others two pints, and so on to four or six pints a day in the more obstinate cases. But Mr. Colles desires it to be understood, that he does not wish to estimate the efficacy of mercury by this old measure:

"The degree of ptyalism that I am always anxious to attain," he observes, "is merely an increased secretion of saliva, accompanied by swelling and superficial ulceration of the gums, and sometimes also of portions of the lining membrane of the cheeks and lips; this I am desirous of attaining as a sort of index which denotes first, that the mercury is acting in a safe and salutary mode upon the system; and secondly, that it displays that degree of power or energy of action, which will be sufficient to eradicate the disease."

These humane and philosophical intentions are accomplished by recourse to therapeutic means equally original, namely, the administration of two grains of calomel every night, and the unseemly application of frictions with mercurial ointment to the thighs. After using these, we are told that,

"About the sixth or seventh day ptyalism is fairly established, the gums are swollen, and appear as if inclined to separate from the teeth; they also present a slight degree of ulceration on their edges, especially in the intervals between the teeth; the lining membrane of the cheeks, opposite to the last molares, assumes a leaden colour, and is also swollen, so as to bear the impressions of the teeth; the soft palate also is often swollen, and more red than natural, as if it were slightly inflamed."

But we forbear to trace the description further. Let it not be supposed that this treatment is reserved for the chronic and secondary forms of syphilis, when there might possibly be some excuse, although we regard salivation in any degree as wholly unnecessary and generally injurious in every stage of the disease. The treatment here laid down by Dr. Colles is supposed to be adapted to "the simple case of a young man affected with primary venereal symptoms, but in other respects in perfect health." To resort to measures the direct tendency of which are unquestionably to interfere with the recuperative powers of the system, aggravate by general stimulation the primary symptom, light a train by which this is transmitted to some other tissue, and produce lesions wholly uncalled for, in some of the most delicate structures and important organs, is to set at nought the evidence of the most ample modern observation, and resign one's self to blind routine and the cant of the old pathology. That primary symptoms do occasionally disappear under the untoward treatment advised by Dr. Colles, cannot be doubted. He would ascribe their removal to the eradicating powers of the mercury, whereas we should be inclined to believe that the patient recovered in spite of the action of that agent.

With such views, upon fundamental points, we regard Dr. Colles's book as calculated to retard rather than promote our knowledge of the pathology and treatment of the venereal disease.

In our next number we hope to introduce to our readers a work of a very different stamp,—that of M. Lucas-Championniere; a work based upon the observations of Mr. Cullerier, a practitioner of the highest character, and whose opportunities of studying the disease in question have been unsurpassed.

G. E.

ART. XX. *A Discourse on some of the Diseases of the Knee-joint; delivered before the Massachusetts Medical Society, at their annual meeting, May* 31, 1837. By GEORGE HAYWARD, M. D., Professor of the Principles of Surgery and Clinical Surgery in Harvard University, and Surgeon to the Massachusetts General Hospital. Boston: 1837. pp. 28, 8vo.

Restricted, as an orator necessarily is, to very narrow limits, a minute exposition of the phenomena and modes of treatment of a class of diseases involving so many and important considerations as that of the knee-joint, cannot be looked for in an address like the present. The author has not, indeed, attempted it. He has judiciously aimed merely at tracing the prominent features of some of the affections of the important articulation just named, considering them as they affect the synovial membrane, the articulating cartilages, and the bones, and he has accomplished this object well. He has certainly not presented us with any striking new views, but he has pointed out the best means of studying the diseases in question; has given us a good, plain, common sense sketch of their characters, diagnosis and treatment; and he has the further merit of calling attention to an obscure and important subject—one which has received from surgeons far less attention than its importance ought justly to claim for it, whether we consider the sufferings these diseases cause or the serious consequences they involve.

ART. XXI. *Address delivered before the Medical Society of the State of New York, February 8th,* 1837. By JAMES M'NAUGHTON, M. D., President of the Society. Albany, 1837. 8vo. pp. 40.

The state of the profession and of medical instruction in the United States is such as to call loudly for reform. The thriving condition of quackery, with the numbers and boldness of its professors—the host of half educated young men annually thrust into the ranks of the profession, by the numerous institutions authorized to grant diplomas, and the quarrels and disorganizations of so many of our medical faculties, all tend unequivocally to establish this fact. Medical schools have so multiplied as to lead, in too many cases, to a rivalry of the most injurious kind,—a competition to obtain students by holding out temptations in the facility and cheapness of obtaining a license to practice—and professional chairs are so numerous, that the occupancy of one can scarcely be considered a distinction, or the office of instructor any longer a peculiarly honourable one. An essential preliminary step, to devising a remedy for these evils, is to calmly investigate the history of medicine in this country, with the view of determining the causes of the existing condition of things. So far as regards the state of New York, this has been ably done by the author of the address, the title of which is at the head of this article; and we attach so much value to his labours that we shall present a full summary of them before our readers.

"No general law regulating the practice of Physic and Surgery was enacted during our colonial state—the only law relating to our profession, passed before the revolution, was in 1760, and was limited in its operation to the city of New York. The preamble to the act sets forth the reasons which led to its passage. It is in these words:

"'Whereas many ignorant and unskilful persons in Physic and Surgery, in order to gain a subsistence, do take upon themselves to administer physic, and to practice surgery, in the city of New York, to the endangering the lives and limbs of their patients; and many poor and ignorant people inhabiting the said city, who have been persuaded to become their patients, have been great sufferers thereby;—for preventing such abuses in future, be it enacted,' &c.

"This act provided, that every student should undergo an examination, and receive a diploma or license. It was further provided, that a fine of five pounds should be recovered from any one who practised without complying with the provisions of the act. This act seems to have been continued in force in the city of New York until the separation from the mother country. The lives of the people living beyond the bounds of the city do not appear to have received any protection against empirics.

"On the 27th of March, 1792, another act was passed, limited to the city and county of New York. The reasons set forth in the preamble for the passage of this, are very similar to those relative to the law of 1760. 'Whereas, many ignorant and unskilful persons, presume to administer physic, and practice surgery within the city and county of New York, to the detriment and hazard of the lives and limbs of the citizens, for the prevention of such abuses in future,' &c. This act required that the student should study Medicine with some authorized practitioner for two years, if a graduate of some college, and three years, if not a graduate—that he should be examined by three practitioners, (other than those with whom he studied,) in presence of the Governor and certain other public officers—and if approved, that he should receive a license to practice. In this act it was provided, that every person practising without a license, should be fined seven pounds, and be incapable of maintaining a suit in any court for services rendered. Doctors in medicine were allowed to practice without a license.

"The first general law regulating the Practice of Physic and Surgery, was passed in 1797. By the act of 23d March of that year, every student was required to study four years, if not a graduate, and three if a graduate. It was also

enacted, that any person practising without a license, should pay a fine of twenty-five dollars. It was further provided, that in case of some sudden emergency, any person might administer medicine, or even perform surgical operations; but no demand for compensation for the services rendered, could be lawfully made.* This act continued, without material alteration, until April 4th, 1806, when the law incorporating the State and County Medical Societies was passed.†

"By that law every county in the state was authorized to form a County Medical Society, which, when organized as prescribed in said act, were declared to be 'bodies corporate and politic, in fact and in name,' each bearing the name of the county in which it was instituted. The several County Societies were empowered to examine students, and if found qualified, to grant a diploma, or license to practice.

"The State Medical Society was instituted by the same act. It consists of a limited number of members, called Permanent, and of a Delegate or representative from each of the County Societies, chosen for a limited time. By its charter, it is authorized to examine students, who present themselves for examination, either by original application, or by appeal from the decision of the Censors of the County Societies. It is also empowered to regulate the County Societies, provided its ordinances do not conflict with the laws of this state, or of the United States.

"By the act of April, 1806, it was declared, that no person should practise physic or surgery in this state, without having first received a license as directed; and that in the event of his practising, without a license, he should not be able to recover, in any court, for services rendered.

"Although prior to the passage of the above act, there existed some Medical Societies in New York, and other places, their influence was limited as well as their privileges. It was not until the organization of the State and County Societies took place, that the profession acquired a regular form. A gentleman who took an active part in promoting the passage of the act, speaking of the state of the profession at the time, says:

"'Those who witnessed the original and progressive settlement of the northern and western sections of this state since 1790, will recognise the mania that infatuated the emigrants from the east, and the ambitious projects formed by those who assumed the title of Doctors. Many who had never read a volume in medicine were suddenly introduced to an extensive practice, and to a reputation of such imposing authority as to control the opinions of their superiors in science, and to prescribe rules of practice for their government. Consultations were generally distinguished for gross controversies at the bed-side of the patient, whose health and life were often immolated to the ignorance, prejudices, or discordant theories of the contending physicians.'"‡

In three months after the passage of the law, no fewer than twenty county medical societies were formed, pursuant to its provisions, and in two years there was scarcely a county in the state of any considerable population, without its medical society.

"From this time," says our author, "the medical profession began to acquire character and respectability. The irregular proceedings, by which certain members of the faculty had hitherto succeeded in acquiring notoriety and credit among the people, received a check. To become fit associates for men of character and standing in the community, required the cultivation of urbanity and good breeding on the part of those who wished to become members of the societies, so that, by degrees, the great body of the profession became subject to one code of medical ethics, the obligations of which were generally acknowledged. There have always, however, been individuals, and not a few such are still to be found, who form exceptions to the general character of the profession; but, it is acknowledged on all hands, that, both in town and country, there is much more harmony,

* Graduates and Licentiates of Colleges of Medicine were permitted to practice without further examination, upon filing a copy of their diploma in the Secretary of State's office, or in the County Clerk's office.

† I am indebted for the above references to a Report of Assembly, 1835, by Hon. Edward Livingston.

‡ Dr. Stearns, New York Medical and Physical Journal, 1828.

much more courtesy, and much more liberality of feeling, subsisting among medical men, than formerly. And what is more important to the public—there has been a proportionate advancement in education, general and medical, among them. Their frequent meetings in the societies, have made them them better and more extensively acquainted with each other, while it has produced more ardour and emulation for professional distinction."

The first meeting of the State Medical Society took place on the 3d February, 1807, when sundry resolutions for the promotion of medical science were adopted; since this period the society has not intermitted its exertions, and Dr. M'Naughton asserts that, "whatever progress has since been made in medical education, has been directly, or indirectly, the result of its efforts."

"The act of 1806, remained in full force, without any important alteration, until the general revision of the laws in 1813. In all the acts relative to the practice of medicine up to this period, some penalty was inflicted upon such as should be found practising as physicians and surgeons, without a license; and in most of the acts, in order the more effectually to protect the ignorant and unwary against the arts of empirics, impostors, and pretenders to medical skill, it was provided that none but the regularly licensed should be able to claim renumeration for services rendered, or maintain a suit for such purpose in any court in the state.

"Pretenders to medical skill have abounded in all ages and countries, who, by various arts, acting on the prejudices, ignorance or credulity, of the multitude, have for a time acquired credit, until their incapacity became exposed, by the suffering, or even death, of their patients. Nothing short of severe penal enactments has been sufficient to repress their unprincipled tampering with human life; and even these, (so strong is the propensity to believe in the marvellous and mysterious,) are insufficient to protect society against the devices of quack practitioners of the healing art.

"It remained, however, for the state of New York to legalize quackery, by positive enactments. The general provisions of the law of 1806 were retained in the revision of 1813, with this most extraordinary proviso:—'That nothing in this act contained shall be construed to extend to debar any person from using, or applying, for the benefit of any sick person, any roots, barks, or herbs, the growth and produce of the United States.'*

"Any advantages which the regular profession might be supposed to derive from the preceding sections, regulating the term of study, and the qualifications for license, were effectually nullified by this singular provision. Under cover of this provision, any person might practise medicine; for among the roots, barks, and herbs of the United States, almost any article in the whole range of the *materia medica* might be exhibited with little risk of detection. For even if the proof could be made clear, a troublesome process of law was necessary to secure the conviction of the offender. The witnesses for the prosecution generally must be physicians, whose evidence is, on such occasions, received with suspicion and disfavour by juries; so that in fact, all the pains and penalties declared against irregular practitioners of medicine, have, for years, been almost a dead letter. A few prosecutions have taken place, and convictions been obtained; but, I believe, on almost all occasions, the sympathy of the public has been on the side of the offending party, while nothing but odium has fallen to the share of the medical profession, for aiding the prosecution. The provision of the law permitting the use of the roots, barks, and herbs of the United States, has been repealed, re-enacted and again repealed since 1813. It is now in full force since 1835, so that all can use these favourite articles for themselves or others, without fear of the law, whatever other causes of fear there may exist in connexion with their administration."

Thus far no attendance on medical lectures is demanded, or even mentioned, in connexion with the requirements for license to practice, although a medical college has been in existence in the state since 1792, and resorted to by a

* In the law of 1797, the use of domestic remedies, "without fee or reward," was allowed, and in that of 1807, the roots, barks, &c. of the United States, were excepted from penalty.

considerable number of students. Indeed, no inducement was held out for such attendance until 1818.

"In a law passed that year, by the legislature, it was enacted, that the regular term of study should be four years, from which one year might be deducted, if the student had attended one full course of lectures at some incorporated medical institution in this state or elsewhere. This last provision, although not positively requiring attendance on lectures, has had a more important influence on the spread of medical education, in this state, than any other provision in the statutes regulating the practice of physic and surgery. At first, most of the students attended lectures, rather with a view to shorten the term of study, than from any expectation of special benefit from the lectures—so little were the great body of practitioners aware of the advantages the public schools possessed over private offices, for the instruction of students."

A medical faculty, composed of six professors, was first organized in New York in 1767, under the charter of King's (now Columbia) College, and the year following, the school was opened. In 1769, through the exertions of the late Dr. Bard, steps were taken to found a hospital, to render the course of medical instruction more complete. A subscription was raised, and a building commenced, but when nearly completed it was destroyed by fire. It was rebuilt, however, and prepared for patients in 1791. The troubles that ended in the revolution at this period began—the lectures were discontinued during the war—and not again resumed until some time after the peace.

In 1792, the trustees of Columbia College re-organized the medical faculty, consisting, as before, of six professors, and the school was re-opened with the fairest prospects of success, and continued to rise in character and to increase in the number of its pupils until 1807, "when, in an evil hour," observes our author, "*another medical school was established in the same city.*"

"On the 3d of March 1807, a memorial was presented to the Regents of the University, by the Medical Society of New York, praying for the incorporation of a College of Physicians and Surgeons—which prayer was granted. By the charter, *all the authorized practitioners of medicine in the county, at the time, more than one hundred in number*, were declared trustees or members of the college. The regents, wisely, as the event proved, reserved to themselves the right to appoint professors, and to modify, or entirely annul, the charter. At a subsequent session of the legislature, the sum of $20,000 was granted as an endowment.

"The school then went into operation, and entered the field of competition with its elder sister, the school of Columbia College. 'As soon as the new college was established,' says a candid historian, 'there commenced a spirit of rivalry and competition between the two schools, which led to the most disastrous consequences. After a long and bitter contest between the two parties, the friends of medical science interfered, and arrested the progress of difficulties, which had nearly proved fatal to both institutions.'*

"In the mean time, the College of Physicians and Surgeons, with 'its multitude of counsellors,' enjoyed neither external prosperity nor internal harmony. Matters came to a crisis in 1811. On the 1st and 25th of March of that year, five several communications were made to the regents, by different parties in the college, stating their respective views and grievances. These were submitted to a committee of the board of Regents, and in consequence of their suggestions, a new charter was granted in June 1812, differing in many respects from the former one. The number of trustees was reduced to twenty-five; but power to remove them was not reserved as in the original charter, hence many of the subsequent troubles of the institution.

"A union between the Faculty of Medicine of Columbia College and the College of Physicians and Surgeons took place in 1814. From this time a new era for the College of Physicians and Surgeons began. It rapidly acquired fame, and a corresponding accession of students, from every part of the United States, from the West Indies, and from the British provinces. Nothing but a vicious

* Lecture at the opening of the Medical Department of the Columbian College, by Thomas Sewall, M. D., &c.

organization could prevent its rivalling the school at Philadelphia; but, unfortunately, it contained within itself, the elements of discord and decay. The Board of Trustees *were mostly medical men, between whom and the professors, harmony could not be maintained.* Their differences ran so high, that in the spring of 1825, a committee of investigation was appointed, by the regents, before whom the professors and trustees appeared. A very full and able report of the affairs of the college, was made to the regents, by lieutenant-governor Tallmadge the chairman of the committee. From this report, it appears, that the college had received from the state, as endowment, in all, $56.457 27 cents, besides a botanical garden, for which the state paid 75,000, to the late Dr. Hosack.

"The difficulties between the trustees and professors could not be adjusted; in consequence of which, and a reluctance to submit to certain regulations made by the regents, the professors, in a body, resigned their commissions."

The regents forthwith appointed a new faculty, who commenced their labours the ensuing season; whilst the ex-professors immediately organized another medical school in opposition. The latter first attached themselves to Rutger's College, in the state of New Jersey, but this connexion was rendered unavailable by an act of the New York legislature, "declaring all degrees conferred by any college out of the state, on students studying at an institution within the state, null and void, as licenses to practice medicine." They next established a connexion with Geneva College; but this connexion being illegal, a very judicious law of the state declaring that *no college shall "have or institute a medical faculty to teach the science of medicine in any other place than where the charter locates the college,"* was dissolved by a process issued from the supreme court, "and Rutger's Faculty of Geneva College ceased to be numbered among the medical schools of the state. But, unfortunately, its discontinuance did not heal the divisions existing in the profession in New York. It was divided into two parties, one friendly to the state school, the other opposed to it. This unhappy state of things still remains." * * *

"The College of Physicians and Surgeons of the western district, was the next medical school instituted by the state. It was incorporated in 1812. It is located at Fairfield, in Herkimer county—a small country village. The legislature granted $15,000, to be raised by lottery, as an endowment. The greater part of this fund was expended in the erection of buildings, and in paying small salaries to the earlier professors. As might have been expected, from the remoteness of the location, and the small number of students, who under the medical law then existing, attended lectures, the school was, at first, not very successful. It spun out a feeble existence until 1818, when its funds became exhausted—the trustees became discouraged, and the professors were on the point of throwing up their commissions. As a last resort, application was made to the legislature for relief. An annuity of $1000, for five years, was granted for its support. The act relative to the practice of physic and surgery, was also amended, so as to shorten the term of study one year, to such as should have attended a full course of lectures. From these two causes, aided, in all probability, by others, the school began to flourish. Its pupils each year became more and more numerous, until the class rooms could not accommodate them. Further aid having been refused by the legislature, the professors, at their private expense, remodelled the whole interior of the college—extended the class rooms, and fitted up apartments for the museums of anatomy and natural history. They also erected a large stone edifice, four stories high, to accommodate, at a low rate, the students with lodging rooms.

"Every thing promised a prosperous course for the school, and the professors flattered themselves that they were about to be rewarded for their exertions, and remunerated for their expenditures. In the session of 1834, there were 217 students in attendance—a larger class than ever attended at a country medical institution."

In the autumn of 1834 Geneva College formed a Medical Faculty, in connexion with its other departments, but under a different government; leaving its management to the faculty itself, and a board of curators. As, however, no degree at that time conferred in the state was a license to practice, except that

granted by the Regents of the University, applications was made to that board to confer the degree of M. D. upon such as the medical faculty should recommend, and at the same time to the legislature for a law declaring the degree of M. D. conferred by Geneva College a license to practice medicine.

"Both applications were strenuously opposed, by parties who deemed themselves interested, both on private and public considerations. It was contended, that the number of students in the state, could not support more than two schools —one in the city and one in the country—that all could be as well taught in these two, as in three or four—*that it would promote neither the interests of the profession, nor of the public, to multiply schools beyond what could be adequately sustained—and that it would lower, instead of elevating, the standard of medical education.* It was further contended, that, even if another medical school were wanted, it should be put under the same regulations as the other colleges.

But these arguments were of no avail, and a law giving the desired privilege was enacted by the legislature.

This school "has completed its third session. The number of students in attendance last session, was between 50 and 60, and at the institution at Fairfield, 164—being an aggregate not exceeding the class in attendance at Fairfield alone in 1834. Even if the two schools were to divide equally the number of students between them, neither of them could be said to be in a flourishing state. There is not support enough for two respectable schools in the country; and it is more than probable, that at no distant period, one or both of the existing ones must be discontinued."

"Such," observes our author, "is a brief, and, of course, rather imperfect, sketch, of the course of medical legislation, and of the history of the medical institutions of this state, up to the last session of the legislature. By an amendment to the act regulating the practice of physic and surgery, passed last session, no person admitted to practise in any other state, or country, is authorized to practise in this state, until he shall have received a license from the censors of the State Medical Society. This amendment was found necessary, on account of the difficulty of determining the genuineness of the credentials, presented by foreigners. In several instances, the papers were ascertained to be forged, and in some others, there were well founded suspicions, that the bearers of the diplomas were not the persons to whom they originally belonged. Examination alone, in such cases, can protect the public against imposition. In other instances, persons going out of this state, or coming in from other states, were known to have received diplomas, without complying with the requirements of the laws of this state. The legislature were also, in all probability, influenced by the consideration, that in several of the contiguous states, and in the Canadas, the licentiates, and medical graduates, of our colleges, could not practise without an examination."

Our author next points out some of the defects in medical education—the greatest he considers to consist in the preliminary education of students of medicine. This defect exists in every State in the Union, and no measures for the elevation of the character of the profession can be successful, until evidence of adequate attainments is required of young men before their admission as students of medicine.

Dr. M. gives some statements illustrative of the facility with which a medical degree may be obtained in some of the New England colleges, which we trust are exaggerated; at all events, they are so discreditable, that we hesitate to transfer them to our pages.

"In regard to dissections," says our author, "all our schools labour under disadvantages. There is no legal mode of obtaining subjects. It is by law declared felony to be concerned in the exhumation or dissection of a human body. The only subjects legally obtained, are the bodies of convicts who die at the state prisons, not claimed for burial by relatives. If all who die at the state prisons were given up, the supply would be inadequate. The bodies of those only who die in winter can be of any use, and these seldom exceed two or three during the season. Few as these are, those from the prison at Auburn are divided between the schools at Fairfield and Geneva. The result of this narrow policy is, that the schools, par-

ticularly the country ones, are scantily supplied—and that in all, the supply is precarious and expensive;—for it cannot be supposed, that those who procure subjects, at the hazard of liberty and life, will expose themselves, without compensation, corresponding with the risk they run."

Dr. M. concludes with the following just observations on the inadequate endowments of institutions for medical instruction, and which are of nearly general application.

"Our medical schools are now supported, almost entirely, at the expense of their respective professors. Is this creditable to the great and prosperous State of New York? What is the reason that such a distinction has been made between the medical colleges and the colleges of arts? Do not medical schools require libraries, chemical and philosophical apparatus, and museums of anatomy and natural history? Can it be expected that professors, from their scanty receipts, will furnish all these, and pay contingent expenses to boot? And if they do, can it be reasonably hoped, that we shall ever possess institutions that can equal the liberally endowed establishments of other countries? Is not the community as much interested in having well endowed medical colleges as literary ones? If so, why has the state made such a distinction between them, in the bestowment of her bounties?

"I do not mean to intimate, by these remarks, that the literary institutions have shared too liberally the bounty of the state. On the contrary, all of them are inadequately provided for. There is scarcely a petty principality in Germany, that cannot boast of a University, possessing a library, containing more books than all our colleges, theological, medical and literary, put together. Some of them have also splendid collections in natural history and other departments of science. I need hardly mention here, that in all these our colleges are sadly deficient; and there is not a single botanical garden in the state.

"Since the amendment of the constitution in 1822, not a dollar has been appropriated by the legislature to elevate our literary or medical colleges. In the mean time millions have been expended on other objects. Canals and rail-roads have been made, and others are in progress in all directions. Every thing, in short, has been done for meliorating the physical condition of the citizen; but what has been done for his moral and intellectual improvement, by our constituted authorities? Nothing—literally nothing.

"Are we never to possess but common schools, and academies, or institutions whose limited means permit them to rank no higher? Must our children encounter the storms of the Atlantic to seek, under other governments, advantages denied them under our own? We hope, that a more liberal spirit will prevail, and that the legislature will set apart some of the wealth of the state, for the purpose of placing our higher seminaries of learning on such an eminence as will enable their professors to look around on kindred institutions in other countries, without feelings of humiliation or consciousness of inferiority."

ART. XXII. *A Report of the New Haven Medical Society, on the expediency of repealing that Section of the Medical Laws of this State, which excludes irregular Practioners from the benefits of law in the collection of fees.* New Haven, 1837. 8vo. pp. 16.

The General Assembly of the State of Connecticut, at their Session in May, 1836, received petitions from various parts of the state, praying for a repeal of the law which enacts that, "no physician or surgeon, who shall have commenced practice since the year one thousand eight hundred, or who shall hereafter commence practice, shall be entitled by law to recover any debts or fees for such practice, unless he shall have been duly licensed by some medical society or college of physicians." These petitions are said to have been got up, and principally signed, by the friends of what purports to be a new system of medicine called the "Thomsonian system." It appears to us to argue a deplorable state of things, when such petitions should receive any attention. The

legislature of Connecticut, did not, however, follow the disgraceful example of a neighbouring state, and grant the prayer of the petitioners; but postponed the petitions to the next session, with an order for a citation to the medical society. In consequence of this citation the Medical Society of New Haven county, adopted the report, the title of which we have given, as expressive of their views in regard to the proposed measure.

This report furnishes a conclusive demonstration of the principle, "*That it is the right and duty of government to protect the people in every possible manner against any trade, craft, or profession, in which the public has peculiar interest, and in which the temptations to defraud and deceive are great.*"

Writing as we do for the profession alone, it will be needless for us to repeat the arguments adduced by the society; it would be going over ground with which our brethren are familiar. But this report should be inserted in the newspapers and widely circulated, so that it may get into the hands of unprofessional persons—those most interested.

ART. XXIII. *An Examination of Phrenology; in two Lectures, delivered to the Students of the Columbian College, District of Columbia, February*, 1837. By THOMAS SEWALL, M. D., Professor of Anatomy and Physiology. Published by request. Washington City, 1837: pp. 70, 8vo., with 8 plates.

This is the most dispassionate examination of the phrenological doctrine, and the strongest array of arguments against its validity, that we have met with. The first lecture comprises a sketch of the origin and progress of phrenology, with an exposition of its leading doctrines, and of the principles upon which it is founded. In the second lecture the question is examined of how far the science is reconcilable with the anatomical structure and organization of the brain, the cranium, and other parts concerned. The subject is treated in a very plain and lucid manner, so as to be perfectly intelligible to general readers; and is, moreover, illustrated by some well executed and interesting plates. The learning and high standing of the author entitle his views to a respectful and attentive consideration; though we must confess that we are not prepared to admit the validity of all his facts, or adopt implicitly all his conclusions.

ART. XXIV. *Directions for the establishment and government of Lunatic Asylums.* Translated from the French of Brierre de Boismont, M. D., by E. QUINCY SEWELL, M. D. (From the Transactions of the Medical Society of the State of New York, Vol. III.)

The prize offered in 1834 by the Society of the Medical and Physical Sciences at Brussels, for the best memoir on the establishment of a Lunatic Asylum—its location, the disposition of its grounds, its internal arrangement, government, and medical attendance, was awarded to the author for this essay. It is a highly interesting paper, and particularly so at this moment—several of the States of the Union being engaged in the construction of asylums for their insane poor. We have recently devoted so much space to the subject, (see our last number,) that we need on the present occasion only recommend the memoir of Dr. Brierre to the attention of those interested, and return our acknowledgments to Dr. Sewell for the service he has done in rendering it generally accessible through a translation.

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

SPECIAL ANATOMY.

1. *On the Elementary Structure of Muscular Fibre of Animal and Organic Life.*—Frederick Skey, Esq. has presented to the Royal Society an interesting memoir on this subject.

The author concludes, from his microscopic examinations of the structure of muscular fibres, that those subservient to the functions of animal life have, in man, an average diameter of one 400dth of an inch, and are surrounded by transverse circular striæ varying in thickness, and in the number contained in a given space. He describes these striæ as constituted by actual elevations on the surface of the fibre, with intermediate depressions, considerably narrower than the diameter of a globule of the blood. Each of these muscular fibres, of which the diameter is one 400dth of an inch, is divisible into bands or fibrillæ, each of which is again subdivisible into about one hundred tubular filaments, arranged parallel to one another, in a longitudinal direction, around the axis of the tubular fibre which they compose, and which contains in its centre a soluble gluten. The partial separation of the fibrillæ gives rise to the appearance of broken or interrupted circular striæ, which are occasionally seen. The diameter of each filament is one 16,000dth of an inch, or about a third part of that of a globule of the blood. On the other hand, the muscles of organic life are composed, not of fibres similar to those above described, but of filaments only; these filaments being interwoven with each other in irregularly disposed lines of various thickness; having for the most part a longitudinal direction, but forming a kind of untraceable net-work. They are readily distinguishable from tendinous fibres, by the filaments of the latter being uniform in their size, and pursuing individually one unvarying course, in lines parallel to each other. The fibres of the heart appear to possess a somewhat compound character of texture. The muscles of the pharynx exhibit the character of animal life; while those of the œsophagus, the stomach, the intestines, and the arterial system, possess that of inorganic life. The determination of the exact nature of the muscular fibres of the iris presented considerable difficulties, which the author has not yet been able satisfactorily to overcome.—*Transactions of the Royal Society*, for 1836.

2. *On the Connexion of the anterior columns of the Spinal Cord with the Cerebellum.* By Samuel Solly, Esq.—The exact line of demarcation between the tracts of nervous matter, subservient to motion and to sensation, which compose the spinal cord, has not yet been clearly determined. The proofs which exist of a power residing in the cerebellum which regulates and controls the actions of muscles,

would lead us to suppose that the fibres of the motor nerves are continuous with those of the cerebellum; but hitherto no observations have been made which prove the existence of this connexion; and it is the object of the author, in this paper, to establish, by a more careful examination of the anatomical structure of this part of the nervous system, such continuity of fibres between the anterior columns of the spinal cord and the cerebellum. The corpora pyramidalia have been hitherto considered as formed by the entire mass of the anterior, or motor columns of the spinal cord; but the author shows that not more than one half of the anterior columns enters into the composition of these bodies: and that another portion, which he terms the *antero-lateral* column, when traced on each side in its progress upwards, is found to cross the cord below the corpora olivaria, forming, after mutual decussation, the surface of the corpora restiformia; and ultimately being continuous with the cerebellum. These fibres are particularly distinct in the medulla oblongata of the sheep and of the horse. The author conceives that the office of the antero-lateral columns is to minister to the involuntary, as well as to the voluntary movements: that the facial nerve arises from both the voluntary and involuntary tracts; and that the pneumogastric nerve arises both from the involuntary and the sensory tracts.—*Ibid.*

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3. *Unusual course of the internal pudic artery.*—Dr. Morton communicated to the University College Medical Society, at their meeting of the 17th of March last, a drawing with the details of a dissection of a male subject, in which the internal pudic artery, instead of running its usual course, did not pass out of the pelvis, but ran almost directly forwards along the side of the bladder and prostate. The body was that of a man about 40 years of age. On the left side the internal pudic artery, springing from the internal iliac, opposite the great sacro-sciatic notch, passed forwards and inwards to reach the under surface of the pubic symphysis, at which point the artery emerged from the pelvis, and ran along the upper surface of the penis, as the arteria dorsalis penis. In the first part of this course the vessel lay close to the side of the bladder, within the levator ani muscle, a little above the vesiculæ seminales; and as it passed along the lateral surface of the prostate, to which it was firmly bound down by the fascia covering that body, the artery lay directly across the line of incision made in the lateral operation of lithotomy. The vessel ascended, in an oblique direction, along the gland from its lower and posterior angle to the symphysis pubis. In this part of its course, the artery gave off no branches. As it was leaving the pelvis, a small branch passed backwards upon the upper surface to the bladder, to which it was distributed, and between the pubic symphysis two branches passed off to the corpus cavernosum and to the bulb of the urethra; the latter gave off the transverse artery of the perineum, and also the superficiales perinei. The internal pudic on the right side ran the usual course, along the inner surface of the ischium. From this arrangement of the vessel, it was very certain that had the lateral operation of lithotomy been performed upon this individual during his life the artery must have been cut across, and a very alarming, if not fatal, hemorrhage ensued, as happened to the late Mr. S. Shaw during an operation in the Middlesex Hospital.—*British Ann. Med.*, Feb. 24, 1837.

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4. *Observations on the best Mode of Demonstrating the Internal Structure of the Heart, and on the Septum of the Auricles in Man.* By Professor Retzius.—With a view to obtain a more instructive representation of the heart in its natural state than has hitherto been done, the author has for some time pursued the following method, which exhibits the cavities and the situation of the valves in a distinct and correct manner. The heart having been removed from the subject, in connexion with the liver, the venæ cavæ, the aorta, and the lungs, and having been properly freed from blood by injections of water, is steeped in a mixture of oil of turpentine and spirits of wine. The cavities are then amply injected through the pulmonary and superior venæ cavæ, the aorta, and the pulmonary artery, with a mixture of white wax and oil of turpentine. As soon as the mass is firm, the heart, together with the great vessels, is separated from the rest, the extremities of the vessels are tied, and the preparation, having been cleaned with the scalpel, is left to dry. When thoroughly dried, it is macerated in spirits of turpentine, till the wax is softened or entirely dissolved. In this manner the heart and arte-

ries are emptied after the walls have dried over the wax forms, which were true casts of the natural cavities, their septa and valves, &c. The parietes themselves, being impregnated with turpentine, lose little of their natural thickness. The parietes may now be either cut open or rendered transparent with the aid of resins, so that the internal structure can be examined. Another method of preparation, somewhat less advantageous, is to open the auricles, ventricles, and blood-vessels, then fill them up with cotton, or to leave them unopened, but to fill them with proof spirit, afterwards suspending them in the same medium. The water contained in the heart's tissue is attracted by the spirit; the walls thus become stiffened, and retain their form even after the alcohol has been removed. Preparations of this kind are to be met with in Hunter's museum.

On examining a heart thus prepared, the first observation we make is that the left auricle forms an oblong pouch, having almost a horizontal position, its right extremity encroaching upon the domain of the right auricle, the situation of which is nearly vertical. At the point where the two pouches meet, the septum of the auricles developes itself with its inferior portion almost lying across the mouth of the vena cava. This is the exact spot which in the fœtus is occupied by the foramen ovale and its border, and the partition itself consists of the thickened valve, by the adhesion of which with the neighbouring parts the foramen ovale was closed up. The upper part of the septum forms the imperfect septum auricularum in the fœtus. If the auricle be opened, the left being filled up, we discover a protuberance presented by the upper part of the border of the obliterated valve. This, together with the convexity formed above it by the septum, probably constitutes the tubercle mentioned by Lower.

The arrangement of the septum in its different parts has the greatest influence over the functions of the heart under the various circumstances of life. If the body be at rest, the blood flows gently from the lower parts into the right auricle, but if it be pumped up by hard breathing, as in those affected with dyspnœa, the influx becomes far more hurried. It is still more accelerated by an uninterrupted exercise of the muscles of the lower extremities, as the muscles then press on the parietes of the large veins, and thus force the blood onwards towards the auricle, whilst its retrogression is prevented by the valves. The curvature of the septum, the tendency of the circular muscles around the foramen ovale, and the curvatures at the entrance of the venæ cavæ, prevent the blood from penetrating from the inferior into the superior venæ cavæ, or vice versâ. If it were otherwise, apoplexy would easily occur in the former instance, and injurious effects on the liver in the second.—*B. and F. Med. Rev.* April, 1837, from *Kgl. Wetensk. Acad. Handlinger*, 1835.

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5. *Apparent Hermaphroditism. Sexual connexion through the canal of the urethra.*—At a recent meeting of the Royal Academy of Medicine of France, M. Bally presented, for the inspection of the members, a young German, affected with a curious organization of the sexual parts, causing the individual to have been regarded, for several years, as a female, though in reality a male. The scrotum of this young person exhibits a deep furrow along the median line, which gives the part a good deal of the appearance of the labia majora in the female, the substance of each labium, or rather demi-scrotum, contains a hard, oval body, well developed (the *testicle*). At the superior commissure of the furrow we observe an elongated body, about an inch and a half in length, resembling a large clitoris, and capable of erection—this is a portion of the root of the penis. Beneath the rudimentary penis we find an opening leading into a canal that easily received the finger; this canal is prolonged upwards towards the bladder, and offers some resemblance to a vagina; when a catheter is introduced through the opening, it penetrates into the bladder. The person, also, affirms that the urine naturally flows through the same orifice. The canal, then, is nothing else than an urethra, enormously distended during the act of copulation, to which this individual has voluntarily submitted himself for several years, on the supposition that he was a female. In fact, the general appearance is completely feminine. He was baptized and brought up as a female; presents no trace of beard; his form is delicate and agreeable; his voice soft, &c.

The individual acknowledges having accorded his favours to various persons of the male sex, whose embraces he sought with avidity. The effect of the first

connexions which he had, was to force in the membrane surrounding the orifice of the urethra, and thus form a *cul de sac*, or funnel-shaped depression. At length the orifice of the canal was opened by the introduction of a small penis, and gradually the canal itself assumed its present dimensions, viz., those of a small vagina. He further affirmed that during the act of copulation, the rudimentary organ enters into a state of erection, and that the friction produces a perfect ejaculation of the seminal fluid. Up to the age of twenty years, he considered himself, as we have mentioned, to be a girl. At about that time, however, an inguinal hernia, with which he was affected, becoming strangulated, the genital organs were examined by a surgeon, and his true sex discovered. This was followed by a certain revolution in his feelings, the petticoat was immediately thrown aside with disdain, and the newly-baptized man would fain have a mistress, but here nature refused all assistance. His attempt at active copulation was all vain, and he was obliged, much against his pride, to return to his old habits and former acquaintances. It is a fact, worthy of remark, that the testicles had remained concealed in the abdomen up to the period of his being operated on for the hernia. This, doubtless, contributed a great deal to the error of sex.—*Gazette des Hopitaux*, No. 11.

GENERAL ANATOMY AND PHYSIOLOGY.

6. *Ciliary Motions in Man.*—In our preceding number, (p. 196,) we gave an account of the discovery, by Purkinge, of ciliary motions in the cavities of the brain, and of the observations of Valentin on the same subject. Dr. C. T. Vos Siebold, we learn from an article in a recent number of our esteemed cotemporary the *British and Foreign Medical Review*, has continued the investigations of the experimentors just named, and has added some facts which he has noticed, respecting the existence of the vibrating cilia upon the mucous membranes in man. He found these cilia upon the whole surface of a nasal polypus, one hour after its removal from an adult. The length of these ciliæ was 0.0028 and 0.0022 of an English line. The motions of the cilia upon one polypus which was examined, were found to be quite regular in their rhythm: in some parts they moved backwards and forwards 300 times, in others 320 times, in others 190 times, in a minute. The movements were always in the same direction; and, when once they ceased, were never resumed. By a very accurate examination, M. Siebold says that he has ascertained that each cilium curves its free extremity towards the part to which it moves, and that small globules of mucus, when in the vicinity of this oscillating body, are thus propelled in the same direction as the curve of the cilia. On condylomata at the entrance of the vagina no cilia could be discovered. They were also not found on the bronchial mucous membranes of those who had died of pneumonia, or of those who had suffered before death from a copious bronchial mucous secretion. In warm weather, also, it is useless to look in the human corpse for the cilia upon mucous membranes. M. Siebold has examined other membranes without finding any cilia; e. g. synovial membranes, sheaths of tendons, the internal surface of arteries and veins, that also of the vessels of the placenta, as well as serous membranes in animals the mucous membrane of whose bronchial apparatus presented an abundance of cilia. M. Siebold recommends all those who are anxious to examine this phenomenon to first experiment upon bivalves, (Unio pictorum, Anodonta anatina, Cyclas cornea;) for in them the cilia are most evident and their motions most easily recognised, abounding as they do upon their gills, tentacula, intestinal canal, &c. Having once witnessed the structure in these animals, it will be readily ascertained in man and other animals.—*Medicinische Zeitung*, No. 28, 1836.

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7. *Period during which divers can stay under water.*—The *Magazine of Natural History*, for December last, contains an interesting article on this subject by Dr. Lefevre, a French navy surgeon. Very extraordinary statements have been long current, as to the length of time that divers can remain submerged, and their falsity seems now to be established by the careful observations of Dr. Lefebre. When stationed in the roads of Navarin, Dr. L. noted on three occasions, the pe-

riods of time which some of the best of the Greek divers, who have been long celebrated for their expertness, remained under water. These divers from their youth, are accustomed to dive and remain a long time under water. Dr. F. has seen them bring cannons and anchors; and tear the sheets of copper from wrecks lying at the depth of 100 and 120 feet. At a like depth they will penetrate into the interior of sunken vessels and bring away articles of a small size.

Dr. F. noted down at three successive times in the course of the year 1829, the period during which these divers remained under water. The articles for which they went lay at the depth of 100 feet, and the temperature of the external air was 24° R. The following are the results of his observations:

1st series.		2nd series.		3d series.	
1st diver . .	86″	1st diver . .	65″	1st diver . .	50″
2 " . .	69″	2 " . .	74″	2 " . .	65″
3 " . .	86″	3 " . .	90″	3 " . .	95″
4 " . .	94″	4 " . .	98″	4 " . .	90″
		5 " . .	84″	5 " . .	60″

Thus the largest period during which the most expert diver could remain under water was but little more than one minute and a half.

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8. *Functions of the 5th, 6th and 7th pairs of nerves.*—The *Revue Médicale*, for April, 1836, contains an interesting case of paralysis of the face, communicated by Dr. L. Tanquerel Desplanches, illustrative of the functions of the 5th, 6th and 7th pairs of cerebral nerves, and confirming the prevalent opinion, that the 5th presides over the sensibility, and the seventh over the mobility, of the face. The author says, he has seen eight cases of the same affection in which the anatomical lesions illustrate the same fact. In the case just alluded to there was paralysis of the external rectus muscle of the eye, caused by pressure upon the 6th pair of nerves by the ophthalmic vein, which was extremely dilated.

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9. *Superfœtation.*—An instance of this has been recorded by Dr. Moebus, of Dieburg, in *Zeitschrift per die Staatsarzneikunde*, for 1836. A female, æt. 35, married since 11 years and the mother of four children, on the 16th Oct. 1833, was delivered of a female infant, fully developed; and on the 18th Nov. following, thirty-three days subsequently, gave birth to a second daughter, also fully developed but feeble.

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10. *On the Function of the Medulla Oblongata and Medulla Spinalis, and on the Excito-motory System of Nerves.*—Dr. Marshall Hall communicated to the Royal Society, at their meeting on the 2nd of March last, a memoir on this subject, the object of which is to unfold what he calls a great principle in physiology; namely, that of the special function, and the physiological and pathological action and reactions of the true spinal marrow, and of the excito-motory nerves. The two experiments which he regards as affording the type of those physiological phenomena and pathological conditions, which are the direct effects of causes acting in the spinal marrow, or in the course of the motor nerves, are the following:—1. If a muscular nerve be stimulated, either mechanically by the forceps, or by means of galvanism passed transversely across its fibres, the muscle or muscles to which it is distributed are excited to contract.—2. The same result is obtained when the spinal marrow itself is subjected to the agency of a mechanical or galvanic stimulus. The following experiment, on the other hand, presents the type of all the actions of the reflex function of the spinal marrow, and of the excito-motory system of nerves, and of an exclusive series of physiological and pathological phenomena:—If in a turtle, from which the head and sternum have been removed, we lay bare the sixth or seventh intercostal nerve, and stimulate it either by means of the forceps or galvanism, both the anterior and posterior fins, with the tail, are immediately moved with energy. Hence the author infers the existence: 1st, of a true spinal marrow, physiologically distinct from the chord of intra-spinal nerves; 2ndly, of a system of excito-motory nerves, physiologically distinct from the sentient and voluntary nerves; and, 3dly, of currents of nervous influence, incident, upwards, downwards, and reflex with regard to the spinal marrow.

The author illustrates his peculiar views by several experiments and pathological observations, which appear to him to show that muscular movements may occur, under circumstances implying the cessation of sensation, volition, and every

other function of the brain; and that these phenomena are explicable only on the hypothesis that impressions made on a certain set of nerves, which he terms *excito-motory*, are conveyed to a particular portion of the spinal marrow belonging to that system, and are thence reflected, by means of certain motor nerves, upon certain sets of muscles, inducing certain actions. The same actions may also be the result of impressions made directly either on the spinal marrow or on the motor nerves. He accordingly considers that the whole nervous system may be divided into,—1st, the *cerebral*, or the sentient and voluntary; 2ndly, the *true spinal*, or the excitor and motor; and, 3dly, the *ganglionic*, or the nutrient, the secretory, &c. The excito-motory system presides over ingestion and exclusion, retention and egestion, and over the orifices and sphincters of the animal frame: it is therefore the nervous system of respiration, deglutition, &c., and the source of tone in the whole muscular system. The true spinal system is the seat or nervous agent of the appetites and passions, but is also susceptible of modification by volition. This theory he proceeds to apply to the explanation of several phenomena relating to the motions of the eye-lids, pharynx, cardia, larynx, muscles of inspiration, sphincter ani, expulsors of the feces and semen, to the tone of the muscular system generally, and to actions resulting from the passions. Lastly, he considers its application to various diseased states of the same functions, as manifested in cynic spasm, vomiting, asthma, tenesmus, strangury, crowing inspiration, convulsions, epilepsy, tetanus, hydrophobia, and paralysis.—*Proceedings of the Royal Society*, for 1836.

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11. *On the Safety-valve of the right Ventricle of the Heart.*—Thomas Bell, Esq. in a memoir some time since presented to the Royal Society, endeavours to demonstrate that the tricuspid valve in man occasionally serves the purpose of a safety-valve, being constructed so as to allow of the reflux of the blood from the ventricle into the auricle, during the varying states of distension to which the right cavities of the heart are at times subjected; that a similar function is maintained in the greater number of animals possessing a double circulation, and also that in the different orders of these animals the structure of this valve is expressly adapted to the production of an effect of this kind, in various degrees, corresponding with the respective characters and habits of each tribe.

The force with which the circulating blood is impelled by the general venous trunks into the heart, and which is dependent on the action of the arterial system, the degree of compression arising from muscular action, combined with the resistance of the valves of the veins, and is also influenced by occasional accumulations of blood from rapid absorption, from impeded respiration, and from cold applied to the surface of the body, is shown to be subject to great and sudden variations. Any increase taking place in this force tends to produce distension of the right ventricle of the heart, followed by disturbance in the valvular action of the tricuspid membrane, owing to the displacement of its parts, which thus allows of a considerable reflux of blood into the auricle.—*Ibid.*

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12. *On the Brain of the Negro compared with that of the European and the Ourang-Outang.*—It has long been the prevailing opinion among naturalists that the Negro race is inferior, both in organization and in intellectual powers, to the European; and that, in all the points of difference, it exhibits an approach to the monkey tribes. The object of the present paper is to institute a rigid inquiry into the validity of this opinion. The author has, for this purpose, examined an immense number of brains of persons of different sexes, of various ages, and belonging to different varieties of the human race, both by ascertaining their exact weight, and also by accurate measurement of the capacity of the cavity of the cranium; and has arrived at the following conclusions. The weight of the brain of an adult male European varies from 3lbs. 3oz. to 4lbs. 1oz. troy weight: that of the female weighs, on an average, from 4 to 8oz. less than that of the male. The brain usually attains its full dimensions at the age of seven or eight; and decreases in size in old age. At the time of birth, the brain bears a larger proportion to the size of the body than at any subsequent period of life, being then as one sixth of the total weight; at two years of age it is one fourteenth; at three, one eighteenth; at fifteen, one twenty-fourth; and in the adult period, that is, from the age of twenty to that of seventy, it is generally within the limits of one

thirty-fifth and one forty-fifth. In the case of adults, however, this proportion is much regulated by the condition of the body as to corpulence; being in thin persons from one twenty-second to one twenty-seventh, and in fat persons often only one fiftieth, or even one hundredth of the total weight of the body. The brain has been found to be particularly large in some individuals possessed of extraordinary mental capacity. No perceptible difference exists either in the average weight or the average size of the brain of the Negro and of the European: and the nerves are not larger, relatively to the size of the brain, in the former than in the latter. In the external form of the brain of the Negro a very slight difference only can be traced from that of the European; but there is absolutely no difference whatsoever in its internal structure, nor does the Negro brain exhibit any greater resemblance to that of the ourang-outang than the brain of the European, excepting, perhaps, in the more symmetrical disposition of its convolutions.

Many of the results which the author has thus deduced from his researches are at variance with the received opinions relative to the presumed inferiority of the Negro structure, both in the conformation and relative dimensions of the brain; and he ascribes the erroneous notions which have been hitherto entertained on these subjects chiefly to prejudice created by the circumstance that the facial angle in the Negro is smaller than in the European, and consequently makes, in this respect, an approach to that of the ape, in which it is still farther diminished. The author denies that there is any innate difference in the intellectual faculties of these two varieties of the human race; and maintains that the apparent inferiority of the Negro is altogether the result of the demoralizing influence of slavery, and of the long-continued oppression and cruelty which have been exercised towards this unhappy portion of mankind by their more early civilized, and consequently more successful competitors for the dominion of the world.—*Ibid.*

PATHOLOGICAL ANATOMY AND GENERAL PATHOLOGY.

13. *Cancer and Perforation of the Stomach, with rupture of an abscess in the left hypochondrium.*—This case, which we believe to be unique, is recorded by Dr. H. C. Lombard of Geneva, in the *Gazette Médicale de Paris* of the 10th December last. The subject of it was a labourer, 44 years of age, of robust constitution, and remarkably muscular, who had been repeatedly admitted into the hospital, sometimes for cramps of the stomach, which occurred very frequently, and were often exceedingly violent; at others, for varicose ulcers of both legs; and what was remarkable, the cramps reappeared as soon as the ulcers commenced to heal, so that he was more than once compelled by the violence of the cramps to renew the ulcers in the legs by walking, a means which always succeeded.

On the 12th of February, eight days after the patient had left the hospital with his varicose ulcers healed, he was seized with violent pain in his abdomen. On his admission that evening into the hospital, he had a natural stool, and urinated abundantly. An hour afterwards Dr. L. found him in the following state:—face pale and contracted; tongue white; no nausea or vomiting; skin cold; extremities cold; abdomen excessively painful on pressure upon the umbilical region; muscles tense, especially in the hypogastric region, which is swollen as if the bladder was much distended; the intellect was unaffected. Bleeding from the arm and fomentations to the abdomen were prescribed.

The next day the patient was worse; there was a very fatiguing hiccup; the pulse was gone; the beating of the heart feeble, tumultuous, not to be counted; the umbilical pain continued; the hypogastric region more prominent and with fluctuation; no stool or evacuation of urine since yesterday. The symptoms increased in intensity and the patient died twenty-two hours after his attack.

Post-mortem. Exterior.—Muscles voluminous and covered a thick layer of fat; in short, the patient had the appearance of having died in the best health.

Thorax.—Lungs, healthy. Heart, large, healthy. Pneumogastric nerves, normal.

Abdomen.—On opening the peritonæum a yellow sero-albuminous fluid, containing albuminous and purulent flocculi, flowed out. The large and small in-

testines were covered with a semi-puriform exudation, which united them together; their exterior surface was bright red, as was also the peritonæum lining the abdominal muscles.

The whole upper left part of the abdomen was occupied by a cavity, circumscribed above by the liver and duodenum; on the right by the liver, the gall bladder, and the duodenum; on the left by the concavity of the false ribs and the superior and lateral portions of the abdominal parietes; below by the anterior surface of the stomach, in which last organ there was a circular perforation with irregular edges, and appearing as if a piece had been taken out by a punch. The debris of food, and the nature of the liquid contained in the cavity, showed the facility with which substances taken into the stomach, passed into this abnormal cavity. The parietes of this cavity were formed by the organs just indicated, but lined by a false membrane of a yellowish colour, and of three or four lines thick; the spleen alone was not covered, and its surface appeared as if macerated in the liquid in which it floated. In the vicinity of the spleen there was a rupture of several inches in extent through which this cavity communicated with the peritonæal cavity.

The mucous membrane of the stomach was mamellonated, greyish, not softened, forming numerous folds, and ulcerated in three places. One of these ulcers was situated an inch from the pylorus at the smaller curvature of the stomach; it was from fifteen to eighteen lines in diameter; its borders were thick and formed by a whitish lardaceous tissue, which presented indurated cellular intersections, crisping (*criant*) under the scalpel, and of fatty lobules transformed into a yellow and resisting substance in some places near the ulceration; the ganglions were soft and reddish. In the centre of this ulceration there was a perforation of from six to seven lines in diameter, with thick, greyish edges, evidently of old date. There were two other ulcerations of less depth and extent, and which were confined to the mucous membrane; one of them appeared to be in progress of cicatrization, if we might judge from the thinness of its edges and the little depth of its base. The mucous membrane of the intestines presented no alteration of colour or consistence; it was remarkably pale in the points corresponding to the highest degree of peritonitis.

Liver, spleen, kidneys, and bladder, natural.

It is difficult to understand how there could exist, for several years, in a person whose muscles were loaded with fat, a perforation of the stomach allowing the passage of the food into a vast peritonæal sac; equally difficult is it to understand how there could exist such extensive disorders in the abdomen, a scirrhous tumour of the stomach, and two other ulcerations of the mucous membrane, in a person whose only complaint was cramps of the stomach and constipation. Nor is it easy to comprehend how the suppuration from varicose ulcers could lessen the pains in the stomach.

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14. *On the importance of Percussion in the Diagnosis of Ascites and Encysted Ovarian Dropsy.*—M. Rostan considers the signs afforded by percussion of the utmost importance in the diagnosis of ascites and encysted ovarian dropsy, where the diagnosis is difficult. When we strike the belly of a patient labouring under ascites, where the effusion has not gone so far as violently to distend the abdominal parietes, if we proceed from the inferior to the superior part of the abdomen, we shall at first have a flat sound, while, at the most prominent part—that is, about the umbilical or epigastric regions—we shall perceive a clear sound, like to that which we obtain on striking a bladder full of air. In encysted ovarian dropsy the reverse is the case—that is, the sound is clear at the inferior part, and dull at the superior. These differences are produced by the different relations which fluid effused into the peritoneum, and an ovarian cyst, have to the intestines. The dulness which we find at the inferior part of the abdomen in ascites, is the result of the accumulation of the effused fluid, which gravitates to the most dependent part of the peritoneal cavity; and while the collection of fluid augments there, the intestines become displaced—and it is important to know of this displacement, because it is it which accounts for the clear sound in the superior regions. In fact, this sound is the result of the less specific gravity of the gases contained in the intestinal cavity, in virtue of which the intestines are raised upwards, as the fluid on which they float accumulates below. The state of the parts,

in encysted ovarian dropsy, is not at all the same; for in ascites the fluid is freely spread out within the peritoneum, while, in the other case, it is shut up in a more or less resisting bag, which gradually increases in size by the accumulation of serous fluid in its interior, and, as it becomes displaced, presses on the intestines of the side opposite to that on which it developes itself, and at last ends by occupying a greater or smaller space in the abdomen. This case is very different from the first; here the intestine does not float in the accumulated fluid, as it is separated from it by a wall of membrane; and therefore, instead of being raised upwards, it will be kept and pressed against the inferior part of the abdominal parietes; and thus, in this case, we find its dull sound high up, corresponding to the cyst, and its clear one low down, where the intestines are to be found distended with gas. In the generality of cases these signs are sufficient for the practitioner; but they may not be sufficient under certain circumstances which are not common, and which may be reduced to the following:—1st. It may happen, in either case of dropsy, that the intestine is not distended with gas: in that case, the signs which have been just pointed out become useless; but this state is only transitory, as the formation of gas takes place during digestion. In such a case the examination need only be deferred for a few hours. 2nd. We may meet with a case of ascites, in which the walls of the abdomen are so much distended, that the mesentery is not long enough to allow the intestine to float freely in the fluid. In that case you must percuss the patient, making him vary his posture. 3d. We may suppose that a cyst, in its developement, occupies a place between the intestines and the posterior wall of the abdomen, and is situated under the mesentery; and that, in augmenting its size, it forces the mesentery along with the intestines towards the superior part of the abdomen. In this case, we must confess, there will be a great source of error, because percussion will give the signs belonging to ascites. It is in cases like these that we feel the importance of not confining ourselves to one sign, but of accurately scrutinizing every symptom that can throw light on the diagnosis.—*La Presse Médicale.*

15. *Case of Otitis terminating fatally.*—Mr. Moore related to the London Medical Society, at their meeting on the 8th of May last, the following particulars of a case of otitis occurring in a young man, 17 years of age. He also presented a morbid preparation of the first and second cervical vertebræ, which had been obtained at the examination of the body *post-mortem*. The patient complained of acute pain in the ear, which came on suddenly, and was followed by a copious discharge of fœtid pus. This occurrence was preceded some months by deafness and an uneasy sensation in the ear. The muscles of the neck then became rigid, and any jarring noise caused great agony. The appetite was good, and the general strength so little impaired, that he followed his ordinary occupation as a compositor. The pulse was about 90, and feeble. These symptoms led Mr. Moore to suppose the bones and structures at the base of the skull were severely diseased, and he formed an unfavourable prognosis. The degree of relief obtained from the treatment employed was very trifling, and the malady continued to increase. The teeth now became nearly closed and the jaws immoveable; the neck was still more curved, and the spinous process of the second vertebræ inclined considerably towards the right side; crepitus was felt by passing the finger from the first to the second vertebræ. At a late period, pain came on in paroxysms, lasting from half an hour to two or three hours; sleep was obtained only by means of narcotics; hectic fever and emaciation became evident. About six hours before death, general paralysis supervened; he passed involuntarily one motion, and gradually sunk. The respiration was not remarkable; one of the symptoms before death was frequent emissions of semen, attended by priapism without sexual desire. Upon examination, pus was found to issue in abundance from the external meatus by applying pressure on the neck. The petrous and mastoid portions of the temporal bone, parts of the occipital, the first and second vertebræ, were denuded and carious; the membranes of the medulla and spinal canal and cerebellum were adherent; pus was found in the canal which communicated with an abscess externally in the neck.—*British Ann. Med.*, May 12, 1837.

MATERIA MEDICA AND GENERAL THERAPEUTICS.

16. *Tannate of Lead.*—Autenrieth has recommended this salt strongly in gangrenous states; it especially was beneficial in the case of a girl affected with a nervous fever, whose back was attacked by deep gangrenous sores: it was applied in the form of ointment. The tannate was obtained by precipitating an infusion of oak bark by acetate of lead. The precipitate was collected on a linen cloth and dried. This is the bitannate which is white. But there are two other tannates: the *neutral tannate*, obtained by boiling the *bitannate* with distilled water; the odd atom of tannic acid is dissolved while the neutral tannate remains; it consists of 65.79 tannic acid and 34.21 oxide of lead. The *basic tannate* is procured by precipitating a solution of tannic acid, or tannate of potash, by disacetate of lead; it is white, but by washing becomes yellowish. Dr. Tott employs the bitannate in the following form:—Dried tannate of lead, 2 drachms; rose ointment, 1 ounce. The ointment is to be intimately mixed, and spread on the sore. —*British Ann. Med.*, June 2, 1837, from *Journ. de Chim. Méd.* March, 1837.

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17. *Clinical Researches on the influence of certain Medicines upon the functions of the Heart.* By H. C. Lombard.—1. Assafœtida. M. L. states this to possess remarkable properties in combating the irregularity of the functions of the heart. Employed *externally*, in the form of plaster, it succeeds in alleviating palpitations which have resisted a great variety of medicines. He has almost constantly obtained some alleviation in a great number of cases. Irregular contractions of the ventricles, occurring in persons affected with disease of the heart, are modified; and it likewise succeeds in those cases which may be considered only nervous. The following is the formula used by him: Assafœtida, 2 ounces; gum. ammoniac, 1 scruple; turpentine, 6 drops; yellow wax, a sufficient quantity. Employed *internally*, he has found it likewise lessen and render regular the movements of the heart. In very small doses, it lessens the palpitations, and produces a remarkable calm; and he considers it a very valuable remedy in nearly all diseases of this organ.

2. *Camphor.* This medicine, given internally, in variable doses, from three to twelve grains in the day, acts in a special manner upon the heart. Among persons affected with hypertrophy, with dilatation of the cavities, the nervous influence is often insufficient to produce regular and complete contractions, and hence often tumultuous action. This state he has found can be modified by camphor, and he has seen the most tumultuous ventricular contractions become regular and perfectly isochronous after the administration of a few grains. He is not able to decide whether it acts as a stimulant or a sedative.

3. *Digitalis.* M. Lombard believes the want of uniformity in the sedative action of this medicine upon the functions of the heart, depends upon the four following circumstances: 1. The state of the stomach; 2, the mode of life of the patient; 3, the doses given; 4, the mode of administration. Sometimes, owing to an irritable state of the stomach, the exhibition of digitalis induces vomiting; and, if this continues after the cessation of the medicine, we must not have recourse to antiphlogistic measures, but to antispasmodics; such as the subnitrate of bismuth, oxide of zinc, and effervescing draughts. The mode of administering digitalis is one of the most important points in its therapeutical history. The infusion is the preparation which produces most promptly symptoms of saturation. In the form of powder it rarely produces vomiting, except when the doses are large and frequently repeated. The best medicines for obviating or allaying these symptoms of saturation are calcined magnesia, subnitrate of bismuth, subcarbonate of iron, or oxide of zinc. M. L. considers the subcarbonate of iron as the best, and thinks he can attribute to its use the absence of baneful results among his patients who took digitalis daily for many months.

4. *Polygala Senega.* The therapeutical action of this medicine is little known. M. Lombard considers it one of the most precious which the materia medica possesses. Administered in the form of extract or infusion, he has found it lower the circulation, and especially regulate the ventricular contractions. The dose employed varied between twelve and twenty-four grains in the course of the day. The infusion, prepared with one drachm to four ounces of water, has been often

administered in the same time.—*British and For. Med. Rev.*, from *Bulletin Gen. de Thérap.* Nov., 1836.

18. *Physiological effects of Tannin.*—M. Cavarra has lately made some experiments on this subject. He administered the tannin in its pure state, to dogs, to the extent of 12 grains, and himself took for three days running three pills, each of 2½ grains. In both cases obstinate constipation was the only effect produced. He killed a dog to whom he had given it, and found the mucous surface of the intestines dry, and the fecal matter hard and collected in the colon, the membrane of which, when examined with a magnifying glass, displayed a remarkable closing of the pores and villi. M. C. has successfully treated with pure tannin six cases of diarrhœa, twenty-three cases of leucorrhœa, and five of pulmonary catarrh, with some cases of hæmoptysis, hemorrhage from the rectum and vagina, and a few of gonorrhœa. He administered it either in the form of pills or of a solution.—*Revue Thérapeutique.*

19. *Therapeutic applications of Indigo.*—This substance was first employed as a therapeutic agent in the treatment of epilepsy, by Lenhossek, and afterwards by Grossheim and others. Its efficacy was afterwards tried by Ideler, a Prussian physician; and among twenty-six patients, in whom indigo was experimentally tried, six individuals recovered completely; three were dismissed cured, who had after intervals of from eight to twelve months a relapse, under the operation of causes which might have induced epilepsy; of eleven patients, the condition underwent an essential improvement; and in six individuals no change took place. At first, the patients were wont frequently, though without effect, to vomit; after some days this ceased, and in its place, there took place diarrhœa, which at first caused from six to eight motions daily, and was occasionally accompanied with moderate colicky pain, but afterwards moved the bowels only two or three times daily, but with fluid motions, and continued so long as the indigo was used, but without impairing the appetite or digestion. The curative reaction of the nervous system upon the agent was principally indicated by this circumstance, that the epileptic symptoms in the first period returned more frequently, and attained a higher degree of intensity, but afterwards became less frequent, milder, and at length entirely disappeared.

Most usually the indigo was exhibited in the form of electuary, with a proportion of the aromatic powder, because, alone, it is very disagreeable to the patient. At first it was administered in the dose of one scruple; this was quickly increased to a drachm and more, so that daily from half an ounce to one ounce might be used for a series of months without difficulty.

In a paper in Graefe and Walther's Journal, entitled Contributions to Casuistics, by D. Moritz Strahl, of Berlin, are some observations on the operation of the same remedy in spasmodic diseases. In the trials made by Dr. Strahl with this agent, in ten cases of inveterate epilepsy, in which it was given in progressively increasing doses, of from one scruple three times a-day, to half an ounce daily for the space of ten weeks, it produced not the smallest effect. During its employment the stools became blue, and the urine assumed a dark green colour. Excepting slight inconvenience of the stomach, no operation of the remedy upon the organism could in general be observed. On the other hand, indigo, in four hysterical females, one of whom was already in the age of decrepitude, evinced the presence of very remarkable phenomena. In all, after about two drachms daily had been taken, violent pain in the region of the kidneys, like colic, took place; the urine assumed a deeper intensity of colouring than in male patients, and at the bottom of the vessel was observed no trifling quantity of fine indigo powder. The intense renal pain continued for four days, and at length subsided under the continued employment of an oily emulsion. In one case only did there ensue a remission of the spasms, and the patient was not entirely well three months after the cure was completed. The operation of the indigo, further, on the womb, was very remarkable, since in two cases, an amenorrhœa was radically cured, while the spasms were throughout undiminished. In two cases of St. Vitus's dance, in a boy of 12 and a girl of 9 years, the indigo was throughout unavailing.

The different clinical trials made with indigo by Dr. Roth, furnished the fol-

lowing results. In epileptic cases, the remedy evinces almost always the same immediate operation; but its subsequent consequences are regulated by the degree of vitality of the nervous system of the patients, and the kind and duration of the epilepsy. These effects are beneficial in all idiopathic epilepsies, curative in those of this class which have not been of long continuance; and in very chronic idiopathic epilepsies, indigo diminishes the violence and the frequency of the paroxysms. Of symptomatic epilepsies, only a few are alleviated by the use of indigo, none are cured.—*Edinburgh Med. & Surg. Journal*, from *Neue Wissenchaftliche Annalen*.

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20. *Physiological operation of Indigo.*—In almost all patients, the use of indigo is succeeded first by squeamishness and vomiting, though the substance itself be tasteless and inodorous. The violence of the emetic efforts appears to be regulated by the individual irritability of the gastric nerves of the patients. Females vomit more readily than males. The vomiting is at first continuous, that is, during the continued use of the agent, and often so violent that the indigo must be given up; but after several days it ceases. It has otherwise the peculiarity that the contraction of the abdominal muscles and the diaphragm is much less violent, and the debility is less considerable than after vomiting induced by other means. The contents of the stomach present nothing unusual, even in respect to taste, only they are of a very dark blue colour, and the fluid is intimately mixed with the indigo, from which it may be inferred that the gastric juice contributes very much to the digestion of the indigo.

Diarrhœa, the second physiological effect of indigo, takes place in general first when the vomiting ceases; yet from this many patients remain altogether exempt. In general, diarrhœa, when once commenced, continues as long as the patients take the indigo, and increases in intensity during the continued use of the remedy. The motions are generally soft, semifluid, and of a dark blue-black colour. The vomiting and diarrhœa are frequently accompanied with slight colicky pains in the stomach and bowels, which, however, may be so violent as to require the indigo to be given up. Those patients who are exempt from vomiting appear to be attacked with more violent colicky symptoms. By the continued diarrhœa there is formed a species of gastrosis (irritation of the mucous membrane of the stomach and bowels,) with loss of appetite, headache, and giddiness, and sometimes the sense of dazzling lights in the eyes.

The third physiological operation of indigo is seen in the urinary secretion. The urine assumes a dark violet colour, deepest in the morning. On the quantity of the urine the agent seems to exercise no influence.

Dr. Roth did not observe coloration of the sweat. But it is remarkable, that one patient, after the use of indigo for several weeks, fell often into slight convulsions, similar to those which ensue on the employment of the nitrate of strychnia.

The dose of indigo is regulated by the irritability of the stomach. It is best to begin with grains, and rise gradually to drachms, or even several ounces daily. Dr. Roth gives the preference to the form of electuary, with proportional additions of the aromatic powder, or Dover's powder, as correctives. In the formula employed in the Hospital of the *Charité*, at Berlin, half an ounce of powdered indigo, rubbed up with a few drops of water, is mixed with half a drachm of aromatic powder, and one ounce of simple syrup, and to be taken in divided doses in the course of the day. Many even take from a half to two ounces, twice and four times daily for the space of several months.

In what manner indigo operates, and to what class of medicines it belongs, is very difficult to determine, and certainly cannot be inferred from its constituent parts. Probably its active principle is seated in the peculiar colouring matter. Though in many respects the operation of indigo is similar to that of tartar emetic, yet this attacks more forcibly the energy of the organism. In all the patients after the use of the indigo the spasms were at first more frequent and more intense, but shorter in duration; but after some weeks their intensity was manifestly abated, and at length they entirely disappeared. All the patients cured by indigo laboured under idiopathic epilepsy, that is, epilepsy without symptoms of organic lesion. Among those who were improved were several idiopathic and symptomatic cases. In one case of epilepsy, which ensued after a remarkable contusion of the head, after the employment of indigo, a moderately long intermission took

place. A boy of 16 years of age, who had laboured for eight years under St. Vitus's dance, and then was attacked with epileptic spasms, was cured of all the symptoms by the use of indigo for six weeks. Of twenty-six epileptic patients treated by means of indigo, there recovered—four males and five females; three males and eight females were improved; and four males and two females remained uncured. In confirmation of the foregoing inferences, the author communicates the history of two cases, in which the treatment by means of indigo operated beneficially, after other means had been found unavailing.—*Ibid.*

21. *On the Sources and Composition of the different kinds of Gamboge.* By Dr. Christison. *On the Botanical Origin of Gamboge.* By Dr. Graham.—The above are the titles of two interesting papers read before the Royal Society of Edinburgh, March 7, 1836.

Gamboge was first made known by Clusius about the commencement of the seventeenth century, as a concrete juice from China. About the middle of the same century, Bontius conceived he had traced it to a particular species of *Euphorbia*, growing in Java and Siam; from the latter of which countries the whole gamboge of commerce was at that time obtained. About the close of that century Hermann announced that gamboge was produced by two species of trees growing in Ceylon, which have been since often confounded together, but which are now designated by the names *Garcinia*, *Gambogia*, and *Stalagmitis Gambogioides*. About the middle of last century, gamboge was referred by Linnæus to the former of these plants, and his reference was generally admitted. But about thirty years later, Professor Murray of Göttingen conceived he had traced it satisfactorily from the specimens collected by Koenig in Ceylon, and information obtained by the same botanist in Siam, to a new species which he called *Stalagmitis gambogioides*.

Dr. Graham shows, from specimens and drawings sent from Ceylon, both by Mrs. Colonel Walker to himself, and by David Anderson Blair, Esq. to the late Dr. Duncan, that the plant producing Ceylon gamboge is neither *Garcinia gambogia*, as Linnæus thought, nor *Xanthochymus ovalifolius*, as conjectured by Dr. Wight and Mr. Arnott, nor *Stalagmitis gambogioides*, according to Murray and Koenig, but is a species described by Lamarck and Gärtner under the name of *Garcinia* or *Mangostana morella*, although it differs from all these genera in the structure of its stamens, and, therefore, probably ought to be considered a new genus among those producing a gambogioid juice.

Dr. Christison proved, that, at the present time, Ceylon gamboge is not an article of European commerce, and that the whole gamboge of the markets of this country comes, as in the time of Bontius, from China. After mentioning the analysis of fine gamboge made by Braconnot in France and John in Prussia, he stated the following as the mean composition of the several varieties of gamboge he has hitherto examined:—

Pipe gamboge of Siam:	
Resin,	72.2
Arabin,	23.0
Moisture,	4.8
	100.0
Cake gamboge of Siam:	
Resin,	64.8
Arabin,	20.2
Fecula,	5.6
Lignin,	5.3
Moisture,	4.1
	100.0
Ceylon gamboge sent by Mrs. Colonel Walker:	
Resin,	70.2
Arabin,	19.6
Fibre of wood and bark,	5.6
Moisture,	4.6

Ceylon gamboge, adhering to a specimen of the bark sent by Mr. David Anderson Blair:

Resin,	75.5
Arabin,	18.3
Cerasin,	0.7
Moisture,	4.8
	99.3

The proportion of the gum to the resin varied somewhat in each variety, but never differed more than 2 per cent. from the means given above.

The author added, that he had found the resin to be the active principle of gamboge.

He inferred from the composition of the different kinds of gamboge, and other circumstances detailed in his paper, that the cake gamboge of Siam is not entirely a natural production, but a manufactured article: that Ceylon gamboge, if freed from incidental fibrous matter, corresponds almost exactly with Siam gamboge: that, therefore, they are probably produced by the same plant: that Ceylon gamboge possesses precisely the same medicinal properties: and that this variety, if more carefully collected, may, in all probability, be applied with equal advantage to every economical purpose which is at present served by the finest pipe gamboge of Siam.—*Transactions of the Royal Society*, 1836.

SPECIAL PATHOLOGY AND SPECIAL THERAPEUTICS.

22. *Observations on Jaundice; more particularly on that form of the disease which accompanies the diffused inflammation of the substance of the liver.* By Richard Bright, M. D.—The causes which generally give rise to jaundice will, perhaps, admit of the following classification:—

1. Congestion of blood in the liver. 2. Obstruction of bile in the biliary ducts, and more particularly in the larger ducts. 3. Chronic change in the structure of the liver. 4. Inflammatory action of the liver.

1. Congestion of blood takes place in the liver under various circumstances, of which the following are the most frequent:—Obstruction to the circulation of the chest, more particularly from valvular diseases, or dilatation of the heart; constipation, pregnancy; and certain conditions of the circulation, connected with remittent and other fevers.

2. Obstruction to the passage of the bile in the larger ducts takes place from biliary concretions; from malignant or other growths in the liver itself; or in glands about Glisson's capsule; from changes in the coats of the ducts themselves; from inflammation of the duodenum; or from induration of the pancreas.

3. The chronic changes in the structure of the liver are of various kinds; sometimes the result of simple inflammatory action of a somewhat acute character, imperfectly subdued; at other times, the result of a very slow and chronic action, affecting either the secreting portion or the cellular tissue;—at others, the result of degeneration, or of malignant action taking place extensively throughout the organ.

4. The inflammatory action of the liver, which chiefly gives rise to jaundice, occurs in its substance, sometimes, if unchecked, going on to suppuration; but at other times producing a gradual change in the texture of the liver.

It is my intention, before bringing forward a few cases to illustrate the fourth class of causes to which I have referred, and which forms the chief object of the present communication, to state briefly some of the more prominent circumstances attending the other three classes; that, to a certain extent, we may have an opportunity of comparing, or of contrasting, their various symptoms, and the morbid changes by which they are marked.

When obstruction takes place to the circulation through the chest, but more particularly when the heart becomes gorged and over-distended with blood, we observe the countenance gradually assume a dingy aspect, in which the purple suffusion of carbonized blood is mingled with the yellow tint of a slight jaundice; the conjunctiva is more decidedly tinged; and if the disease continue long, the jaundice sometimes completely prevails over the purple tint: the urine becomes scanty, and high coloured, throwing down the lateritious sediments; but the dejections are not obviously deficient in bile. In this condition, the primary disease

has occasionally been overlooked; and this error has been confirmed, when, on examination in the right hypochondrium, the liver has been found enlarged, descending three or four inches below the margin of the ribs, and decidedly tender and painful on pressure. In these cases, the obvious embarrassment in the chest, and the peculiar distress and anxiety of countenance, will generally present themselves in conjunction with the faint and dingy colour of the jaundice, as evidence of the original disease; and lead us to seek those stethoscopic signs, which will render still more obvious the nature of the obstructing cause.

Should death occur, it will probably have been preceded by the passage of blood, more or less freely, from the lungs or the intestines; and the examination of the body will demonstrate, that the liver has only partaken, with other organs, in the congested state of the venous system. The liver, under these circumstances, is sometimes found in a simple state of congestion throughout all portions of its tissue, to such a degree, as to give it a general dark colour, and afford an abundant flow of blood when an incision is made; but at other times, when the congestion has been of longer duration, it presents that mottled appearance which has been correctly compared to the section of a nutmeg. In the early stages this appears to be simply a state of sanguineous congestion; but when it has continued long, some more fixed deposit seems to take place, and many of the acini assume a light-yellow colour, and a degree of firmness which is not found in the healthy organ. In connexion with this condition of the liver, the mesenteric veins will be found full of blood; the villous membrane of the intestines pretty generally of a deep-red colour, but varying in different portions; the internal surface of the stomach often suffused, to such a degree, as to suggest the idea that some deleterious substance has been administered; the pancreas of a purple, or a leaden hue: and while thus the abdominal viscera are loaded with venous blood, the lungs are gorged, and blood is effused into them, in the form of apoplectic masses; and, in all probability, a certain quantity of serum, tinged with blood, and slightly coloured with bile, will be discovered in the cavities.

The treatment of this form of jaundice resolves itself in those means which are calculated to relieve the original disease; but much assistance is to be derived from the local abstraction of blood; by cupping from the pit of the stomach; or by the application of leeches to the anus, which more directly unloads the vessels of the abdominal circulation.

The second class of causes upon which jaundice depends includes those cases in which, owing to diseased structure or vitiated secretion, some positive mechanical obstruction takes place, preventing the flow of bile from the larger ducts, and thus retaining it within the substance of the liver. In cases of this kind, we usually have a very vivid colour displayed upon the skin; which takes place either suddenly, or by slower degrees, according to the precise nature of the obstructing cause; and which continues a longer or shorter time, likewise, according to that cause; either ceasing altogether, or continuing till death takes place, at no very distant period; or passing gradually into that dingy green colour which, at first sight, impresses the eye almost like the countenance of the mulatto; and, in that sense, may not unfairly deserve the appellation of black jaundice. Amongst these mechanical causes, the two most frequent are, undoubtedly, biliary concretions, and malignant tubera.

The presence and even the passing of biliary calculi is by no means necessarily accompanied with jaundice; for as long as the cystic duct alone is obstructed, or the hepatic or common duct only partially blocked up, the fixed yellow colour may shew itself, although slight indications of jaundice may be present, and may recur frequently, passing away with surprising rapidity, so that almost daily changes may be observed. But, on the other hand, when the common duct is blocked up, the most brilliant jaundice often takes place, and the same in the more rare cases of the calculus being lodged in the hepatic duct. This colour will occasionally be diffused most suddenly; and when this is the case, if the obstruction be not removed, a fatal result will sometimes speedily follow.

The evidences of biliary concretions, as deduced from the appearance of the jaundice, are therefore by no means determinate and certain; but the pain with which the disease is generally accompanied may be considered one, at least, of the most prominent symptoms which attend the passing of calculi, and assist in throwing light on the cause of jaundice. That pain is of two kinds,—a dull aching pain, which is constant, and an acute agonizing pain, which comes and goes

in paroxysms. The severity of the pain is so extreme as to bring on a state of the greatest exhaustion, and reduce the pulse below the natural standard, both as to strength and frequency, or, still more often, to render it rapid and weak, while the hands and the whole surface are bedewed with a cold perspiration. The urine becomes highly tinged with bile, and the stools of a pale drab colour; but this often varies in the course of the disease. Vomiting, hiccup, and a frequent catching inspiration often accompany this form of disease, and the symptoms are aggravated or diminished as the paroxysms of pain advance or recede. Another very frequent symptom is to be found in the occurrence of rigors at somewhat irregular intervals; but sometimes returning periodically, almost with the exactness of an intermittent. This form of jaundice is very apt to return from time to time, either from the successive passing of calculi which are seldom solitary, or from the ineffectual attempts made to get rid of a large calculus.

Should death occur in this form of jaundice, the cause of the biliary obstruction is generally detected without difficulty, by finding concretions in some of the various forms they assume, blocking up partially, or completely, the passages by which the bile should escape; and very frequently we have an opportunity of explaining peculiarities which have occurred in the course of the disease, by the situation occupied by the calculus. It is by no means necessary that the calculus should be large, for we occasionally find the obstruction to have been complete, though the gall-stone has been of very moderate dimensions; and occasionally the calculus has passed, leaving the duct greatly distended, but still the constitution has not been able to rally from the effects of the disease. The liver, in this form of the disease, is found considerably loaded with bile, and the bile-ducts often distended, sometimes forming pouches in which bile is collected, shewing a long-continued and frequently-returning tendency to obstruction.

The treatment of jaundice, under these circumstances, is to be directed to the removal of the temporary obstruction, and consists of such means as are likely to favour the passage of calculus. Opiates combined with purgatives, warm-bath, and assiduous fomentations, are amongst these means; but besides these, the use of mercurials and antimony are of great importance. The antimony, with a view of relaxing spasms, should be combined with the purgatives, wherever vomiting is not a very prominent and distressing symptom. The use of mercury is much more doubtful, and it ought not to be carried to any great extent; for if the obstruction be very obstinate, we run a great risk of doing mischief by over-stimulating the liver, and shall probably add to the distress under which the patient labours, both by increasing the quantity of bile secreted, when there is means of carrying it off, and likewise by increasing the irritability and diminishing the powers of the system by the action of the remedy. In these cases, then, there is no doubt that injury is not unfrequently done by the administration of mercury; but this is still more liable to be the case in those instances of jaundice from mechanical obstruction, which arise from organic deposits.

The most frequent instances of organic deposit giving rise to jaundice are those in which malignant disease establishes itself in some of the complicated parts which lie in the neighbourhood of Glisson's capsule—the small lobes of the liver, the glandular structures, the pyloric end of the stomach, the substance of the duodenum, or the pancreas.

Where any organic lesion of this kind takes place, the jaundice is generally less sudden in its appearance than in other cases, though I have known apparent exceptions to this rule,—I say apparent, because, in many cases, particularly amongst the poor, disease may have made a gradual but decided progress, without exciting attention, till the change of colour has become very observable, and then it has been supposed to have originated suddenly. It happens much more frequently that the countenance has gradually become suffused with bile, but at length the more decided jaundice has taken place, and this has gone on increasing in intensity for a time, after which the colour has lost its brilliancy, and assumed the dark dusky green hue and squalid appearance, which is one of the worst symptoms. In this form of jaundice the urine becomes loaded with bile, till it assumes a colour deeper than porter, but of a green tint; and the stools are of the lightest drab colour, approaching to white. Now, the patient becomes drowsy, ecchymosis takes place in various parts, blood escapes from different surfaces, the frame emaciates, and a state of exhaustion, succeeded frequently by coma, closes the scene.

Malignant disease may, however, exist in the liver to a very great extent, without producing any marked or decided jaundice; for as long as it developes itself only near the surface, or in such parts as it does not make pressure on any large biliary duct, although slight effusion may result, the decided jaundice will not appear: but, when the malignant growths occupy parts external to the liver, but are so situated as to press upon the hepatic or the common duct, this system shews itself in its greatest intensity.

There are other symptoms, more particularly those connected with the evacuation from the bowels, which accompany the complete retention of the bile—occurring in cases where pressure is made on the common and perhaps the pancreatic duct—to which attention ought to be directed; though, as yet, no certain indications can be drawn from them. I refer to the evacuation of fatty matter, more or less mingled with the fæces. In several cases where the obstruction has been in the pancreas itself, a considerable quantity of that substance has been seen floating, and completely separated from the fæces; of which another instance, besides those I have already published, has lately occurred to me in the hospital. But in most cases of very obstinate jaundice, accompanied by complete obstruction, an unusual quantity of fat has been detected; and my friend, Mr. G. O. Rees, has kindly undertaken several analyses for me, with a view of ascertaining this fact; the result of which may, at some future time, be more fully stated.

The appearances presented by the liver, where organic mechanical obstruction has long existed, are generally those of the most marked accumulation of bile in all the ducts, behind the obstructing cause, whether they be the larger or the smaller, so that, in some cases, the whole liver assumes a deep olive-green colour, or occasionally a still more vivid shade of green; the large ducts within the liver are distended to the size of the finger; the hepatic, cystic, and common ducts are of still greater dimensions; and the gall-bladder, containing several ounces of bile, projects far beyond the margin of the liver; the fundus forming a tumour, which has been perceptible to the touch, during life.

The other appearances are those which belong to the disease producing the obstruction, and to the effects of the jaundice on different organs. Amongst the former are tubera of various characters, but generally of hard and solid consistence, or softening towards their centre; enlarged and hardened glands; or a scirrhous state of the pancreas; and frequently a complete and permanent closing of the common ducts.

The treatment in these cases is necessarily little more than palliative. As long as the symptoms have not fully convinced us of the nature of the disease, we may be induced to employ mercurials cautiously; but where the disease is confirmed, mercury can be of little or no utility, and will generally be productive of very injurious consequences: it ought, therefore, to be avoided, except in the form of an occasional purgative, and whatever can allay irritation, support the tone of the stomach, and supply gentle nourishment to the system, will afford the best means of prolonging life, and diminishing the suffering of the patient. What power iodine, in any of its forms, may be capable of exerting over deposits of this kind, or how far it may be able to check the progress of their formation, is at present not sufficiently ascertained.

The third class of causes includes various chronic changes in the structure of the liver; and in these, many of the symptoms present a marked difference, when compared with those of the two foregoing classes. The colour of the skin seldom partakes either of the purple tinge which attends thoracic obstruction, or of the deep yellow, or the dingy green, which are so frequently observed in cases of mechanical closing or obliteration of the life-ducts. The change from the natural colour is usually gradual and inconstant; and the yellow tinge of the conjunctiva often precedes, for some weeks, any more decided indication. In time, however, the bronzed appearance of the forehead, or the darkened areola of the eye, bespeak the approaching change; and a jaundice, bearing the lighter tints, from a sallow suffusion to a fainter or more decided lemon hue—still, however, liable to considerable fluctuation—establishes itself over the whole body.

The urine is usually scanty, and pretty deeply coloured with bile, frequently depositing the pink sediments in abundance. The alvine evacuations seldom present that marked deficiency of bile which in some other cases is observable: on the contrary, they vary through the different shades of brown and yellow; and

are often remarkable, rather for the unequal manner in which the bile is mingled, than for the absence of that secretion. The action of the bowels is generally irregular; and as the disease advances, evacuations of blood frequently take place. Ascites and anasarca usually follow quickly in the train of these diseases.

The more frequent cause which excites this form of jaundice is the excessive use of stimulating food and drink; inducing long-continued or frequently-repeated over-action of the liver, rarely amounting to an appreciable state of inflammation. It likewise arises as a sequel to more decided and even inflammatory attacks; and is sometimes the result of the diffused scirrhus propagating itself through the organ.

The appearances presented after death vary greatly; but, as regards the liver, are all, more or less, indicative of long-continued morbid action. The liver is sometimes increased in its size; but very frequently quite the contrary, the organ having evidently undergone contraction in the progress of the disease: indeed I have, in some cases, most distinctly traced its enlargement in the beginning of the attack, and its gradual diminution towards the more-confirmed stages of disorganization. Though the larger ducts are pervious, and a certain quantity of imperfect bile is found in the gall-bladder, yet the whole substance of the liver is frequently tinged by the bile retained within its smaller ducts. A general granular appearance exists throughout the liver, as if the acini were drawn into masses, surrounded by thickened cellular membrane: and if, without being injected, a portion of liver in this state is macerated in water for several weeks, the little granules assume the appearance of adipocire; and may be easily washed out by a stream of water, leaving a fine tissue of vessels and cellular membrane floating in the water. When the disease has gone further, the bands of cellular membrane are seen intersecting the structure, and forming more decided septa between the masses of acini. These are, the more common appearances, where, from frequent over-stimulation, gradual change in the structure of the liver has given rise to jaundice. Of some of the appearances produced by malignant deposits distributed generally throughout the organ, I shall take another opportunity of speaking.

Besides the changes in the liver, a great many others, affecting the organs of the abdomen and the peritoneum, might be mentioned; but that which is most frequent is the disease and ulceration of the lining membrane of the colon, which very generally occurs where the structure of the liver has gone into chronic degeneration; and in no case more frequently, than when the true fatty degeneration, which is seldom accompanied by jaundice, has taken place.

The treatment in this third class of jaundice is rather by the cautious adaptation of food, the avoiding of stimulus, and the long-continued employment of such medicines as restore and keep up the moderate action of the system, than by any powerful remedies. Much may be done in the early stages, if the patient will submit to regimen: but when serous effusions have taken place, and other symptoms of advanced disease have shewn themselves, little but temporary relief can be expected.

It will, however, I think, be found, that one of the most common causes of jaundice is what I have assumed as a fourth cause—a state of inflammatory action more or less generally pervading the substance of the liver; and it is highly probable, that in different cases different constituent portions of its intimate structure become more affected than the rest: but this is a point which requires stricter investigation than has hitherto been bestowed upon it. I consider this inflammatory state, in many respects, different from that very chronic action of which I have lately been speaking, and which may rather be called a state of long-continued irritation, than a state of inflammation. The causes from which it arises are frequently very different, and, besides irregularities of diet, include atmospheric exposure, the effects of external violence and injuries, the irritating effects of biliary concretions and of the retained bile, and perhaps the stimulating action of mercury. The symptoms likewise differ in many respects from those of the other forms, though not separated by sharp and abrupt lines of demarcation; and the changes produced on the substance of the liver are decidedly different, affecting much more generally the secreting portion than the connecting cellular tissue, and probably involving the branches of the portal vein in preference to other parts.

The progress of inflammation, in these cases, varies so greatly in its intensity and in its rapidity, as to allow of a division being made into the more and less acute forms. It frequently comes on very insidiously, with symptoms and feelings of general constitutional derangement, depression of spirits, slow pulse, oppressed breathing, wandering abdominal pains, constipated bowels, and sometimes sickness of the stomach. In a day or two, the conjunctiva becomes tinged; and in a few days more, there is universal bright bilious suffusion of the skin. It is now found that the pulse is either accelerated, or sometimes still oppressed; and frequently, on pretty severe pressure about the region of the liver, some degree of tenderness is manifested; while in other cases, pressure produces little or no immediate suffering, but the pain comes on gradually a short time after the pressure has been made, and continues for hours or days. Cases of the less acute kind generally yield readily to treatment, if it be adopted early; and they form a large proportion of the cases of simple jaundice which present themselves in practice. In other cases, the inflammatory action is attended with much more severe symptoms, with considerable pyrexia, quick pulse, flushed countenance, and dry tongue, while a jaundice of the most intense colour is diffused over the whole surface. The stools are, both in the more and less acute cases, of a light colour; but less decidedly so, and subject to greater variations than when the obstruction is mechanical; and occasionally, after a few days, give little evidence of deficiency of bile. The urine is deeply tinged. When the disease assumes its more active and febrile form, those symptoms referable to the brain and nervous system, and which appear to depend upon the deleterious effects of bile circulating in the blood, are more intensely marked than in any other form of jaundice; and the tendency to hemorrhage sometimes comes on very early, and is excessive. In some cases, rigors, which assume the form of irregular intermittent paroxysms, form a prominent feature, as the disease advances; and then it often happens, though not always, that suppuration is established; and this may be going on to a great extent, while still the jaundice has rather decreased, or varied exceedingly in its intensity.

In cases of jaundice from inflammatory action, the condition of the liver after death differs according to the period at which the disease has proved fatal; but, in general, the size of the organ is not materially increased; though, on the contrary, it is not unfrequently perceptibly diminished. There is no accumulation of bile in the minute ducts, and the yellow tinge which pervades certain portions of the structure is scarcely more than other structures of the body have obtained from the bilious impregnation with which the blood is loaded, and bears no analogy to the dark green of the liver, loaded with bile from obstruction in the large ducts. On examining the gall-bladder, it is found to contain little bile, and sometimes scarcely a trace of that fluid is to be discovered colouring the mucus accumulated by the secretion of its lining membrane.

When the disease has terminated early in its course, the whole liver seems rather soft and flaccid; the surface appears variegated, of a light-yellow, and dark-red or purple, in patches; and certain portions project above the rest, which, when cut through, sometimes prove of a softer texture, and even to be undergoing a process of change or disorganization; and portions of the same kind are intermixed throughout the whole substance of the liver; while, at other times, the yellow portions are harder than the surrounding substance.

If the disease has not proved fatal at the early period, and while the jaundice is in its brilliant and intense form, but has gone on for some weeks, till the skin has assumed the light lemon-colour tint which often bespeaks a very general disorganization of the liver, we find the structure extensively altered, and a great many of the acini apparently altogether incapable of receiving such a quantity of blood as is necessary for the secretion of the bile, or for giving the healthy colour to the organ. They are then of a whitish-yellow colour, and rather hard and contracted than enlarged; and these altered acini are seen in groups and clusters, which, on careful examination, will generally be found to follow the course of the divisions of the portal vessels, so as to be disposed around them like a sheath, which sometimes extends to the thickness of a quarter of an inch.

There is still another condition of the liver, apparently resulting from this diffused inflammation of its substance, and which occurs when the stage of suppuration has become gradually developed; we then find the liver pervaded by a multiplicity of abscesses, all of which seem tending to discharge themselves into

branches of the portal vein, which then assumes a most unhealthy suppurative appearance along large portions of its course.

With regard to *treatment*, in cases where jaundice depends upon inflammatory action, it must always be decided antiphlogistic; but it is only where it presents itself under the more violent forms, that general bleeding need be employed. In other cases, cupping from the margin of the ribs, and (as soon as the bleeding is stopped) the assiduous application of poultices over the liver, will be most important remedies. The combination of calomel, antimony, and opium, must be occasionally administered; and antimonials must be combined with the purgatives, which, in the form of pills, should be given to act regularly on the bowels, and should be aided occasionally by the sulphate of magnesia and other saline purgatives; and, in many cases, the saline purgatives, alternated occasionally with mercurials, are sufficient to cure the disease. A free and uninterrupted action from the skin is most desirable; and to promote this more effectually, the warm-bath may be very advantageously employed; and the poultice, while it restrains the patient in bed, assists forcibly as a diaphoretic measure.

Under treatment of this kind, a very large proportion of cases are completely cured; and where the result is otherwise, it generally arises from some complication of diseases; most frequently from previous disorganization of the liver, or from neglect, on the part of the patient, in not applying for medical aid, or in not steadily pursuing the plan laid down, for it is not uncommon to find persons inclined to make light of an attack of jaundice, if the pain or inconvenience attending is not such as to prevent them altogether from pursuing their usual occupations. Nothing, however, can be more injudicious; and it is the duty of the practitioner to impress this upon his patient; for it can never be a matter of slight importance that either obstruction or inflammatory action should exist in the intimate structure of a secreting organ, and still less in an organ so delicately complex as the liver; and there is no reason to doubt, that although, even without treatment, an attack of this kind may pass off, the liver will be some time before it has completely recovered; and thus a tendency to relapse, or to a renewal of the complaint, may occasionally be observed, shewing itself at longer or shorter intervals throughout life, and terminating at length in the destruction of all the powers of the stomach, the ulceration of the colon, miserable emaciation, or universal dropsy.—*Guy's Hospital Reports*, No. III.

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23. *Cerebral Apoplexy of New-born Infants.* By Evory Kennedy, M. D., Master of the Dublin Lying-in Hospital.—The apoplectic attack in new-born infants may be a simple primary affection, exhibiting, as we see in the following case, all the symptoms of an apoplectic seizure, as observed in the adult.

Case I.—*Primary or Simple Apoplexy.* October 14th.—The child of C. W. enjoyed perfect health up to the sixth day from birth, when it refused the breast, and suddenly fell into a state of stupor, with laboured stertorous breathing. The pulse 60; face tumid and livid; bowels, &c. perfectly natural. One leech was immediately applied over the fontanelle, and another at the lower part of occiput; the spine was rubbed with volatile liniment, and the body immersed in a warm-bath, whilst the head was kept cool. The respiration became natural, and pulse rose to 120; shortly after the leeches fell off.

15th. Much better, in every respect; its sensibilities are sufficiently acute; but still cannot suck, not grasping or holding the nipple when introduced into the mouth. To be supplied with breast milk and a small quantity of wine whey through the day. This child continued improving, and was quite well on the 16th.

This case may be looked on in every respect as one of simple apoplexy; and it may be fairly inferred, that the train of symptoms depended upon mere congestion.

Apoplexy may be combined with inordinate or spastic action of the muscles of the face, trunk, or extremities, more or less complete or partial, a striking instance of which we have in the following case.

Case II.—*Apoplexy combined with Tonic Spasm.* This child exhibited a tumour on the occiput, the effect of a twenty-nine hours' pressure in labour. A few hours after its birth it became insensible, its respiration laboured, and the muscles of the neck and lower extremities were spastically fixed, producing complete opis-

thotonos. The mæconium had been freely evacuated by castor oil; a leech was applied to the fontanelle, and two to the spine, and the child placed in the warm-bath; calomel exhibited in small and repeated doses, the spine rubbed with volatile liniment, and a turpentine injection administered. The sensibility gradually returned, the spasm subsided, and the child recovered.

The cerebral symptoms in the child are, in a large proportion of cases, merely secondary, and symptomatic of disease, or obstructed function in remote organs, as the annexed cases will illustrate.

Case III.—*Secondary Apoplexy.* The child of B. C., a boy, had been suffering from its birth under biliary derangement, attended with yellow discoloration of skin, dark, unhealthy evacuations, and abdominal uneasiness, particularly in region of liver, for which he had been treated with mercury, purgatives, and turpentine enemata, the bowels acting freely. On the fifth day he fell into a state of stupor, attended with slow laboured respiration and suffused countenance; pulse eighty; pupils contracted and insensible. After lying in this state for about six hours, a fit of general convulsions ensued, when a leech was applied to the back of the head, and the spine and abdomen were rubbed with stimulating liniment; under this treatment he amended immediately, and left the hospital perfectly well on the eighth day.

This appeared to be a case of secondary cerebral disease, the apoplexy being consequent upon the biliary derangement. It was not, however, the less serious in its nature, from this circumstance, and required the same treatment to remove it as if it had been the original morbid state.

Case IV.—*Apoplexy from obstructed Respiration.* A male child, seven days old, was found lying on his face, in which position he had been for some time, his mother thinking he was asleep. When taken up, he was in a state of stupor, countenance livid, respiration irregular; each inspiration was performed with a convulsive motion, the expiration was tardy and prolonged; heart beating slowly and faintly. Frictions, stimulating applications, ammonia, &c. were had recourse to, and after a short time respiration became gradually more frequent and regular, though still convulsive. A fœtid enema with turpentine was thrown up. He now seemed much improved, the countenance becoming less livid, and he cried frequently. In an hour after, the respiration was observed again irregular and laboured; a similar mode of treatment was adopted, but not with the same success; dilute wine whey was administered by the mouth and rectum, with but partial good effect, as he never completely rallied, and he died in six hours.

Post-mortem Examination, sixteen hours after Death.—Body stiffened, lips livid, there was not much blood in the vessels or scalp, but on raising the bones a considerable quantity escaped. The veins on the surface of the brain were turgid, there was some transparent subarachnoid effusion. On making a section of the brain, a marked oozing of dark blood was observed on the incised surface, increased by making pressure. There was about half an ounce of fluid in the ventricles. The cerebellum presented a similarly congested appearance. The veins of the spinal marrow were also turgid. The lungs did not crepitate freely under the finger, and when cut into a quantity of black blood was poured out. The larynx was filled with reddish mucus. There was a small quantity of serum in the pericardium. The right side of the heart was filled with blood in a coagulated state; abdomen healthy.

Case V.—*Apoplexy from Interference with the Functions of the Thoracic Viscera.* The child of M. F. was large but weakly on birth, when it was immersed in a warm-bath and the respiration established. In the course of four hours, however, it fell into a state of stupor, at first apparently sleeping, but at length it could not be roused; the surface of the body and nails becoming blue. The heart's action was not to be detected at the left side, but was perceptible at the right. It gradually became comatose, in which state it continued for some hours, and expired.

Post-mortem Examination.—On opening the thorax, the entire of the abdominal viscera, except the liver and right kidney, were found in the left thoracic cavity, having passed through an enlarged œsophageal opening. The heart and lungs were contained in the right thoracic cavity. The vessels of the brain and membranes were generally much congested, and there was a considerable quantity of serous fluid effused between the arachnoid and pia mater.

Even in those cases where the symptoms present leave us no reason to doubt that the cerebro-spinal system is markedly engaged, we rarely find lesions of the same nature, or to the same extent, in the new-born infant as in the adult, who exhibits a corresponding train of symptoms. Thus we have never met with blood effused into the corpus striatum or optic thalamus in the apoplexy of new-born infants. Where extravasation does occur, it is generally at the base or surface of the brain, and proves immediately fatal. In the majority even of fatal cases of this disease, the morbid appearances observed are merely turgescence of the veins and sinuses, with sanguineous oozing from the structure of the organ itself, and perhaps serous effusion underneath the arachnoid, at the base of the skull, in the ventricles or spinal cord. Little can be said on the treatment of these cases, further than that the success attending them will be found to depend upon combating the cerebral symptoms promptly, whether they constitute the original disease, or merely occur as consequent upon other morbid states.

Depletion to the extent practised would by some be objected to, whilst others would esteem it as not carried far enough to afford the necessary relief. This discrepancy to us appears (problematic as it may seem) to establish the accuracy of the plan adopted. It cannot be doubted that the objection of many practitioners to depletion, in these and similar cases, has arisen from its having been carried too far,* and been used too indiscriminately. A new-born infant will bear the application of one or two leeches with the happiest effect, in cases of congestion or inflammation, when three or four would prove fatal from the debility induced. In some cases the application of two leeches or even of one, is attended with palor of the countenance, quick pulse, and exhaustion almost approaching to syncope, and requiring the administration of stimulants, as wine whey, to restore the natural tone and energy of the vital powers.

Leeching is both the safest, easiest, and most effectual means of abstracting blood in new-born infants, after it becomes impossible to obtain it from the funis; and whatever some persons may assert to the reverse, experience has quite satisfied us, that without its assistance in the cases above treated of, the fatality would have been much increased. Case No. IV. is one in proof of this assertion; here depletion was withheld, and other means, as stimulants, &c., relied upon, under the impression that too much debility existed to admit of it, and yet this debility, as the result proved, was the effect of the congestion which would have been removed by depletion. In similar cases we have depleted, and followed the depletion with the administration of stimulants with the most marked benefit, nay, it has even been necessary in some to alternate the depletion and stimulation again and again, before the oppression and fictitious debility were removed, and the proper balance between the vital organs established.—*Dublin Journal*, January, 1837.

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24. *Spinal Apoplexy of New-born Infants.* By Evory Kennedy, M. D.—Spinal diseases, the obscurity attending the diagnosis and investigation of which is so proverbial, have of late years attracted much attention. It is to be hoped that this impetus will be productive of satisfactory results in their elucidation, an attainment only to be arrived at by those who possess an opportunity of observing and tracing these cases, recording them accurately. We shall now give a few cases of these affections falling under our notice in the new-born infant; one of the most interesting of them is spinal apoplexy. That dependent on extravasation of blood into the spinal canal is a rare disease; several such, the result of injury, are on record; but its occurrence is not confined to these.†

Dr. Abercrombie records an interesting instance of this lesion, in which the blood was effused into the canal without the theca, in an infant six days old. The most striking symptoms in this case were the fixed state of the jaw, and difficulty of deglutition. Only one case has occurred to us in which this lesion was observable on dissection.

Case VI.—This was one of trismus nascentium, and ran the usual course of that malady, proving fatal in about thirty hours from the commencement of the attack.

* See North on Convulsions, and Davis's Obstetric Medicine.
† See Cases reported by Drs. Bright, Chevalier, and Olivier.

The following were the Post-mortem Appearances.—In the spinal canal, without the theca, a considerable quantity of blood was effused; and the veins along the medulla spinalis were very turgid, and filled with dark blood.

A remarkable coincidence then is observable between the case recorded by Dr. Abercrombie, and the one here reported, not merely in the morbid appearances observed, but in the symptoms occurring during life; indeed, so much so, that were we not aware of the extreme accuracy of observation with which that acute and talented physician and author is endowed, we might, upon the reading, have pronounced his case as one of trismus nascentium. On this subject, however, we shall not at present dwell, as trismus must demand from us a distinct consideration, in recording at some future period the results of certain treatment at present under investigation in this hitherto fatal malady.

As is the case in cerebral, so in spinal apoplexy the train of symptoms strictly apoplectic may occur without actual lesion of vessels, or effusion of blood. This may, with every propriety, be termed congestive apoplexy of the spine. The following are cases of this form of disease.

Case VII.—*Congestive Apoplexy of Spine.* On the fifth day from birth, this child was suddenly attacked with screaming, which continued for an hour; it afterwards fell into a sound and protracted sleep, bordering on stupor; and, on awakening the next morning, its face was livid, eyes shut, mouth drawn down at each side, and frothing; and its arms were fixed firmly against its sides. In the course of the morning the breathing became hurried; and abdomen very tense; and it died within twenty hours from the commencement of the attack.

Dissection a few hours afterwards.—The brain, abdomen, and thoracic viscera, perfectly healthy, but a remarkable vascularity and turgescence of the spinal and medullary vessels was observable throughout their course.

This case would be described as the plethora spinalis* of continental writers, and affords a good specimen of this disease devoid of all other morbid complication.

Case VIII.—*Congestive Apoplexy of Spine.* The child of C. G., a healthy boy, was attacked on the third day from birth with a general convulsive paroxysm, after which the arms remained fixed, and face livid. The back of the neck was leeched; and several dark evacuations were procured by aperient medicine. However it gradually sunk, and expired within twenty-eight hours from the commencement of its illness.

Dissection.—The cellular membrane was found generally very vascular; and the intestines spasmodically constricted in several places. The brain was very much congested, and the vessels of the medulla spinalis, the thecal vessels, and those at the origins of the spinal nerves, were extremely distended and turgid.

In the last case the disease was complicated with derangement of the child's bowels, and the intestines exhibited spastic constrictions, in several parts of their course; these spasms of the intestines may, however, have been referrible to the same irritative or morbid state of the spinal marrow, that produced the inordinate or convulsive action of the voluntary muscles.

The congested state of the spinal vessels, or inflammatory action in the membranes, may, if unchecked, terminate by effusion into the canal, and this effusion will produce such interruption in the functions of the medullary mass and its nerves, as may prove incompatible with the life of the individual.

The following case is illustrative of this fact.

Case IX.—*Effusion into the Spinal Canal.* The child of A. E. (a girl) had experienced difficulty in the establishment of its respiration after a protracted birth. The day afterwards it was attacked with general convulsions and violent screaming; the hands remained firmly clenched; the abdominal muscles tense; respiration diaphragmatic, short, and frequent. In despite of leeching and aperients, the convulsions returned, and were repeated at half hour intervals throughout the following day; the child expired comatose in the evening.

The vessels on the hemispheres were much loaded, and the brain, on being divided, exhibited numerous bloody points. A quantity of serous fluid flowed from the sheath of the medulla spinalis. The medulla oblongata was very firm, whilst

* See Esquirol, *Bul. de la Faculte de Med.* Portal, *Cours d'Anat. Med.* tome iii. Frank. *De Verteb.*

the vessels of its membranes, and the venous vessels at the roots of the nerves, were excessively turgid and congested.

Morgagni* gives a case of effusion into the spinal canal, attended with pain and paralysis: it proved suddenly fatal: Chevalier,† one of a child twelve months old, in which paralysis and great pain also were present: it proved fatal in three days. Dr. Abercrombie‡ relates a case in which there was effusion of a gelatinous fluid within the canal, but outside of the theca: in this case, coma appeared to be present from the commencement of the attack.—*Ibid.*

25. *Paralysis of New-born Infants.* By Evory Kennedy, M. D.—Paralysis in the new-born infant is not a very unfrequent disease; it may occur as the effect of injury to the nerve in the part paralyzed; or in its course, after its transmission through the cranial or spinal aperture. Examples of this we have in injury to the portio dura, as in face presentations; or where the head has been long pressed in the pelvis against the projecting ischiatic spines; several cases of this kind have occurred to us, in which the disease was quite local, the paralysis being removed on the subsidence of the tumefaction produced by the protracted pressure.

To some it may appear that the following case was more than a mere local paralysis of the nerve, yet, on a closer examination, it will be found quite possible that no cerebral or spinal derangement may have existed.

Case X.—*Case of Paralysis of the Seventh Pair of Nerves.* G. B. had a tedious labour, the head of the child remaining low in the pelvis for many hours. On birth there was a considerable tumour observed on the scalp, and a sloughing spot the size of a shilling on the left parietal bone. The delivery took place early on Sunday morning; and about three o'clock on Monday a remarkable alteration was observable in the appearance of the countenance. The angle of the mouth was drawn slightly to the right side, while the child remained quiet; on its crying, which it did almost without intermission, the whole face became distorted, the angle of the mouth being then drawn very much backwards and upwards to the right side; the *ala nasi* of the left side not being so much expanded as that of the right, gave the nose a deformed appearance. The eye on the left side remained permanently open, although the one of the opposite side closed in sleeping and crying. The mouth but partly resumed its natural appearance on the child becoming quiet. The brow of the affected side was not corrugated. The child, in other respects healthy, was removed from the hospital in this state.

In most cases, however, the paralysis is markedly combined with cerebral or spinal derangement; in some preceded by a distinct apoplectic seizure; in others it is preceded by a convulsive paroxysm. It often co-exists with convulsions, which generally occur in the side opposite to that paralyzed, as in the following.

Case XI.—*Paralysis of Portio Dura of right Side, and third Nerve of left.* June 15th.—This child, when expelled, was very feeble; the mother had been fifteen hours in labour; after some time, by stimulation, &c., a convulsive respiration was established. There were two scars noticed, one on the left parietal, the other on the anterior portion of the left temporal bone. This latter was deep, and seemed as if it had been inflicted by some sharp instrument; lower down on the cheek there were one or two scratches; on the opposite side a depression was evident, but without any injury to the surface; the respiration throughout the day was laboured, with occasional sighing; the left side of the face became somewhat tumid; the right eye was kept constantly open, the pupil dilated and insensible to light; the left eye was kept closed, the pupil also dilated and insensible; an aperient was given, followed by healthy evacuations; some wine whey was administered.

At 5, P. M. The muscles of the left side of the face and body were thrown into convulsions; those of the arm and head were remarkably affected, while the whole of the right side maintained a state of perfect quietude. A bath was administered, followed by an enema.

16th. The infant has remained in a state of almost coma ever since; the left side of the face is more swollen; left eye still closed, the right remaining open; had a number of convulsive paroxysms, brought on by touching or in any way

* Epist. 10, sect. 13. † Med. Chirurg. Journal, vol. iii.
‡ Abercrombie on the Brain, p. 356.

disturbing him, not very violent; experiences some difficulty in swallowing; bowels regular.

17th. Much the same; heart's action 120, laboured; respiration 40. A leech to the neck; wine whey.

18th. Improved by the leeching; towards evening opened for the first time his left eye; expression of countenance more natural; left side of face less swollen; drank more frequently; still some tendency to convulsive motions of the left side, but much less active; pulse 120; bowels free; was put to a healthy, free breast, but could not be induced to suck; took wine whey; a leech was applied, after which he slept quietly. On separating the eyelids at 2, P. M., the eyes were observed turned upwards, so that the pupils could not be seen; pulse now 114, small.

19th. Had a slight convulsive paroxysm yesterday evening; expression of countenance more natural; left side and arm still rigid; pupils less upturned.

20th. Spasms of left side occasionally; bowels not free. To have castor oil.

21st. Looks much better; is willing to suck, but seemingly cannot satisfy himself owing to weakness of the muscles. Head has regained its natural shape; still some rigidity of left side.

Left hospital on the 22nd, and was brought back on the 25th, the mother stating that he had a number of twitchings the day before. He now seems to make more use of his right side.

Occasionally, in these cases, convulsive twitchings occur in the paralyzed extremity, the limb, in the intervals, remaining perfectly palsied. In such, however, we generally find that the sensibility in the paralyzed limb is unimpaired, the functions of the motor tract being alone deranged. The following case affords us an example of this form.

Case XII.—*Paralysis of the Portio Dura, and Spinal Nerves of right Side.* The head on birth was slightly compressed; the child soon rallied.

Second day. There is paralysis of the right side of the face, as also of the right arm: on being excited, a slight convulsive motion is induced. A leech was applied to the nape of the neck, and a grain of calomel, followed by castor oil, administered.

Third day. Much the same as to the paralysis. Convulsive twitchings not so frequent.

Fourth day. Has been uneasy through the night. Convulsive startings more frequent; paralysis as before. Repeat the leech.

Fifth day. Much relieved; more quiet; is rather pale; seems weak. To have wine whey with breast milk.

Thirteenth day. Has been gradually improving. Paralysis of face less apparent, but has not entirely passed away; wrist still pendulous; in other respects quite well.

Dismissed: the mother wishing to go home.

We occasionally meet with a variety in which a more or less complete paralysis of one side will occur, along with a partial paralysis of the other; perhaps merely one nerve evincing any interference with its functions, as in the following instance.

Case XIII.—*Hemiplegia of left Side, with Ptosis and Paralysis of Portio Dura of right Side.* Immediately after birth a large, soft tumour was observed on the right side of the head, principally on the vertex, with two or three small excoriations on the left side. The left eye closed; the mouth drawn to left side; and when the child cries, the *ala nasi* and angle of the mouth at the same side are drawn up; the right eye open; right side of the face unaffected during crying. The left side of the body is completely paralyzed; the extremities are of less bulk than those of the right, and are rough to the touch; the muscles very flabby; both pupils are insensible to light.

On the third day after birth, it had three or four slight convulsions confined to the upper half of the body. It was unable to suck, but deglutition did not seem to be affected, as it swallowed with facility. A leech was applied to the vertex, followed by the warm-bath; stimulating liniments were rubbed over the spine; the child recovered and was dismissed cured on the eighth day.

Here then what a capricious selection is made as to the nerves engaged: we have the spinal nerves of the left side generally paralyzed, the functions of the portio dura of the left remaining unimpaired, whilst those of the reverse side are

interfered with, and this anomalous state increased by the paralysis of the third nerve on the left. Ascribing the paralysis of the portio dura here to injury, inflicted by pressure, after its passage out of the stylo-mastoid foramen, would do little in simplifying the matter, as it may be inferred that the same cause, whether it were congestion (or whatever else) of the brain or spinal marrow, that produced the paralysis in the spinal and third nerve, also acted upon the portio dura. In this case, as well as in No. 10, we have a good illustration of that form of paralysis of the motor nerves of the face, which has so much occupied the attention of Bell, Magendie, and Mayo, the portio dura of the right side here being alone paralyzed, whilst that of the left remained unimpaired, the reverse of what occurred in No. 10. However we have an additional interest imparted to the case by the paralysis of the levator palpebræ muscle, supplied by the third nerve, as evidenced in the ptosis with which the left eye was affected, whilst the right remained permanently open from the paralyzation of the orbicularis muscle, which is supplied with its motor nerve by the portio dura.

In cases of paralysis, as in apoplexy, we look upon it, that although they may depend on organic derangements, yet actual lesion, such as ruptured vessel, disruption of the intimate texture of the brain, or even serous effusion, is unnecessary, and rarely (much more so than in the adult) met with, as producing this disease. In the cases which we have had an opportunity of examining, we have seldom found more than a congested state of the vessels of the brain and spinal column, of the meninges* and roots of the spinal nerves. If lesions in the texture of the brain occurred in these cases, as they do in the adult, we should have permanent paralysis remaining also in the infant, a circumstance very rarely met with, if we admit the accuracy of the opinion advocated by some, that when disruption of cerebral texture has occurred, there is never reunion by cerebral matter, nor capability of transmitting nervous influence.—*Ibid.*

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26. *Convulsions of New-born Infants.* By Evory Kennedy, M. D.—The universal liability of infants to convulsions, is but too well known; and although no climate or latitude appears to afford protection against these attacks, it would seem that certain localities and states of atmosphere predispose to them.

Those forms depending upon atmosphere or climate, such as prevail in the West Indies, or amongst ourselves in crowded hospitals, or ill-ventilated suburban districts, exhibit peculiar characters, stamping them as what we might term specific diseases; like all diseases owing their existence in a great measure to atmospheric causes, assuming peculiar types and characteristics, and proving generally more fatal in their tendencies. Under this head may be classed the epidemic convulsions described as occurring in Paris, by Gaultier Claubry; the epilepsy recorded by Dr. Longe as occurring at Copenhagen, from which nearly thirteen thousand children perished in thirteen years; the *trismus nascentium*, at present so prevalent in the West Indies amongst the children of the negroes, and formerly so fatal in this hospital, (although now comparatively but seldom† met with here,) every sixth‡ child having been destroyed by it, according to the report of the late Dr. Joseph Clarke, made in 1792.

Dr. John Clarke§ is of opinion that in every case of convulsions, the brain is at the time organically affected either directly or indirectly; and Brachet‖ states, that every case of convulsions, partial or general, must be dependent upon cerebral irritation. These statements are with equal confidence denied by North and others. It is difficult, we might say impossible, to arrive at an accurate knowledge of the truth of either opinion. This much, however, may be said, that whether the cerebrum or spinal cord be previously engaged or not, when convulsions are present, there is every reason to apprehend their becoming so, and we should direct our treatment with the recollection of this fact strongly impressed upon our mind.

The frequent occurrence of convulsions as symptomatic of disease, and their rarity as an original morbid condition, are facts now universally admitted. It is

* See Cazanvieilh, Archives Gen. for May, 1827. † See Collin's Midwifery.

‡ Mr. North, in his allusion to Dr. Clarke's Report, omits to mention that it was from *trismus nascentium* this large proportion of infants was lost. See North on Convulsions, p. 1. § Commentaries on Diseases of Children, p. 90.

‖ Brachet sur les Convulsions.

perhaps more important than any abstract recognition of the nature of the normal state, that a rational and successful practice is generally established in consequence of the admission of this principle. The profession owes much to Mr. North for the clear and lucid manner in which he has placed this subject before them.

The primary cause of paralysis and convulsions may be described as to a certain extent identical; namely, such an interruption of or interference with the functions of either the brain or spinal marrow, as causes a variation from the uniform balance which regulates the antagonizing muscles, and retains them in a state of neutralization.

Whatever be the actual state of disease or lesion in the cerebro-spinal system in these cases, in paralysis there would appear to extend from it a defective stimulation to the muscle or muscles paralyzed; on the contrary, in convulsions this stimulation would appear to be in excess.

This neutrality of the muscles may however be disturbed in two ways; either by the diminished contraction of one muscle or class of muscles, leaving the antagonizing muscles in excess of action from want of neutralization; or, from excess of contraction in one class, rendering the ordinary contractions of their antagonists unavailing in neutralizing their action. This latter is the state generally met with in convulsions, the former in paralysis. The excess of contraction may again be either permanent, as we see in tetanic fixture of the limbs, trismus, &c.; or it may be temporary, producing, by the alternating excess and diminution of its contractions, those sudden spastic motions called convulsions. Not unfrequently these very different states of paralysis, and permanent spastic or convulsive action, are confounded, from the fact of the limb occasionally remaining fixed and motionless in both; this difficulty in diagnosis is further increased, by the fact of paralysis of one class of muscles in a limb, say the extensors, occurring whilst the natural contractions of the antagonizing muscles, the flexors, fix it, and cause it to exhibit the appearance we would expect in a limb fixed from excess of muscular stimulation.

The following case is illustrative of that form of excess of muscular contraction, in which there is combined with occasional increases of muscular stimulation, a permanent excess, producing a fixed state of certain limbs, which in this instance exhibited all the characters of catalepsy.

Case XIV.—*Convulsive Action of Muscles of Deglutition followed by State of Catalepsy.* This child, a girl, small sized, was very weak when born, the labour had been tedious, and she was with difficulty brought round. The cutiele of the hands, feet, and body was observed to peel off in scales. Cerebral oppression; face deep coloured; lips livid; and a heavy smell from person. Ordered wine whey, and a warm-bath, castor oil, and an enema if necessary. Next day, 27th, lies heavy and stupid; rarely cries; respiration abdominal, slow, and irregular; each ordinary respiration followed by two half respirations; bowels freed. Leech to the nape; warm-bath. Evening:—Leech did not fasten; child cold, restless; surface dark-coloured; occasionally uttered a bleating scream. On offering drink she became convulsed; the spasmodic action commencing with the diaphragm; the muscles of the pharynx became next engaged; when swallowing was attempted, the whole muscular system became convulsed. The lower jaw was spasmodically elevated and depressed in the attempt to swallow: the mucous membrane of the pharynx of a deep red colour. Two leeches were applied to the sternum, and calomel and chalk administered: a bath.

28th. Leeches bled well; quieter through the night; deglutition more easy, but still attended with a convulsive movement. Mucous membrane not so red: bowels free. Evening:—Twice during the day uttered three or four bleating screams as if in pain, followed by complete opisthotonos. The eyes became fixed; pupils dilated, not contracting under the stimulus of light; arms firmly flexed; hands clenched; respiration momentarily suspended. In this state she remained for a minute, the heart meantime acting violently. A convulsive sob, occurring irregularly, was the first evidence of returning respiration. Pulse 160. Pupils, after the paroxysm, obeyed the light; but the surface continues dark; lies, in the intervals, with the arms and legs firmly flexed; bowels freely moved; discharge offensive; deglutition improved; has been for some hours comparatively at ease: bath; continue powders.

29th. Convulsions returned in the night; swallows freely; seems weaker; respiration and pulse as yesterday. Continue powders.

30th. No decided convulsions since; but lies with extremities in a state of tonic contraction.

September 3d. Has for the last three days remained in a state of seeming catalepsy; swallowed whatever was given to her; bowels acted regularly; by degrees she aroused and became more lively; the contraction of the extremities was not so continued. In this state her mother insisted on taking her out of hospital.

The following case is an instance of convulsions occurring as consequent upon retention of the meconium, and deranged bowels—one of the most frequent causes of secondary convulsive attacks observed in new-born infants.

Case XV.—*Convulsions symptomatic of retained Meconium and Deranged Bowels.* This child, a boy, the day after birth refused the breast, and seemed to suffer abdominal pain. A grain of calomel and some castor oil were administered, which appearing to produce griping, the child was put into a bath. Next day, it was stated that the medicine did not act well; the evacuations were scanty, at first blackish, and latterly like dry moss, with a discharge of a considerable quantity of flatus. Towards evening he showed a tendency to convulsions; the eyelids were firmly closed; on separating them, the pupils were contracted; hands strongly clenched; lips compressed; tongue tremulous; respiration laborious; there was some difficulty of swallowing. A slight rash was observed on the upper part of the thorax; the abdomen was tumid; the mucous membrane of the pharynx high-coloured. Ordered an enema, with a few drops of spirits of turpentine, to be followed by a bath. A leech to be applied to the nape of the neck: some wine whey. Next day, 13th, he was improved; bowels acted freely; discharge green and pasty; urine scanty; rash more general; sucks more willingly; seems still to suffer pain; pupils more natural. Calomel, half a grain twice in the day. Evening:—Paroxysms of pain recurred frequently, with convulsive twitches, increased by the discharge of fæces or urine, which is now more abundant. Had a leech applied to the neck at two, P. M., followed by a bath, with relief.

14th. Slightly uneasy through the night; convulsive motions not so frequent; bowels once freed; discharge lighter coloured; funis separated. To have some castor oil.

The further treatment of this disease consisted in small doses of calomel at long intervals, with aperients interposed. The secretions gradually became more healthy, and the tendency to convulsive movements decreased in the same proportion; the rash also disappeared. He was attacked on the 16th with ophthalmia, first of one eye, then of the other; and was dismissed on the 26th, cured.

Tissot ascribes cases of this kind to a spastic constriction of the sphincter ani preventing the escape of the meconium.

As in more advanced childhood, convulsive attacks not unfrequently occur precursory to the coming out of the eruption in exanthemata; so in the eruptive diseases of new-born infants, the cerebro-spinal system appears to be affected in a marked manner about the same period. The following cases are exemplary of this.

Case XVI.—*Convulsions preceding Miliary Eruption.* The child of F. M., a boy, when born was very weakly and discoloured, the extremities became quite blue. The mother was at the time labouring under typhus fever. Warmth was applied, and a little wine whey given. In eight or nine hours he was observed to be seized with convulsive twitches, the arms being occasionally flexed with a sudden spasmodic motion; the fingers firmly bent, the thumbs drawn in to the palm of the hand; the muscles of the face were slightly convulsed; bowels confined. One grain of calomel to be given, followed by castor oil. Next day, 21st, convulsive startings have continued ever since with scarcely any interval; bowels relieved; discharge green. The skin is of a yellow colour, and feels exceedingly rough and harsh; there is a most disagreeable fœtor from this child. A leech to the nape; breast milk.

22nd. Convulsive motions as before, particularly of the arms and hands. An eruption, consisting of a number of minute vesicles, is apparent over the head and chest, and in patches on the face. This commenced by a red patch, which

on being examined under a microscope, was found to be made up of a congregation of very minute vesicles with vascular interspaces; the vesicles gradually enlarging, the vascular interspaces disappeared, and it now presents the appearance of a vesicular miliary eruption. Bowels free; discharge black and green. Heart's action 104; respiration 66. To have one-third of a grain of calomel three times in the day: a bath and wine whey.

23d. Convulsive twitchings continued through yesterday, but towards evening became less frequent; was pretty quiet all night, and had but one slight convulsive paroxysm this morning. Pulse 120; respiration 36.

24th. Attempted yesterday to suck; was given some breast milk, and lay very quietly dozing before the fire; had slight twitches twice in the night; sucked more freely; evacuations more healthy. Eruption has disappeared; skin still rough and harsh; yellow tinge remains.

27th. The cuticle of those places which had been the seat of the eruption is now desquamating. No return of convulsive movements; bowels acting healthily; is lively and sucks well.

Case XVII.—*Partial Convulsions symptomatic of Strophulous Eruption.* The child of M. R., a healthy boy, was attacked on the sixth night after its birth with screaming and convulsions, which at first commenced in one arm, and then extended over the whole of one side of the body; recurring at intervals of an hour for several fits.

In the course of a few hours, a profuse strophulous eruption appeared all over the body, forming large blotches over the joints. After the eruption had come freely out, the convulsive fits diminished in frequency and duration, and soon ceased entirely. The child recovered.

In the progress of inflammatory attacks of the viscera or cavities, convulsions occasionally occur, either as symptomatic of the serious state of disease under which the child labours, or as the result of the extension of the disease to the cerebrum, spinal cord, or their coverings. The following case exhibits an instance of the latter form of convulsion, and appears to depend upon general inflammatory action in the serous tissues, extending to the serous membrane of the brain and medulla oblongata.

Case XVIII.—*Convulsions, with serous Effusion into Cranium and Spinal Canal.* The child of A. L., a girl, was attacked with laboured, panting inspiration on the 26th July, when twenty-four hours old. Fæcal discharges still dark, treated with leeching, calomel, and aperients, but without relief. On the 27th it had several convulsive twitchings of the upper and lower extremities, the bowels acted freely, panting respiration continued. It remained with little change, the convulsive twitchings occurring occasionally, until the morning of the 28th, when it expired.

Post-mortem Examination.—In addition to copious sero-purulent effusion into the cavities of the thorax, and solidification of the lungs, the vessels of the brain were found very turgid, with its substance of a pink colour; a table-spoonful of fluid was found in the ventricles, and a much larger quantity at the base of the brain, and within the theca vertebralis.

We have already seen, in treating of apoplexy and paralysis, that convulsions not unfrequently occur as the effect of these. On the other hand, convulsions occasionally precede an apoplectic or paralytic seizure. They thus either stand in the relation of cause and effect towards each other, or the same state of sympathy or the same derangement of the sentient and motive centre that produced the one form of disease may give rise to the other. In the following case, a well marked apoplectic seizure succeeded to the convulsions, and a retarded action, bordering on paralysis of the respiratory muscles, attended them. This case is further interesting from showing the necessity that exists for depletion when the head becomes engaged after convulsions; as we feel no hesitation in stating that the chances of this child's recovery were very much lessened by abstaining from this plan of practice.

Case XIX.—*Convulsions followed by Apoplexy and Death.* The child of A. B., a male, was in perfect health until the fifth day, when it got a convulsive fit, after which it became of a dark livid hue; pulse fifty, breathing scarcely perceptible; its bowels had been acting naturally. It was put into a warm-bath, and spirit of ammonia liniment applied to the chest, when its breathing gradually became

perceptible, but slow. It remained for twenty-four hours in a state of stupor, and insensible to stimulants, an interval sometimes of forty seconds occurring between each respiration; ammoniacal injections were thrown into rectum, the strongest stimulating liniments rubbed upon the surface of the body, and the warm-bath used, but it expired about thirty hours from the commencement of the attack. Unfortunately no post-mortem examination could be obtained.—*Ibid.*

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27. *Chronic Urethritis cured by injections of extract of Ratanhia.*—Dr. Salvadore has successfully treated a case of gonorrhœa of three years standing, and which has resisted a host of remedies, by injections of extract of ratanhia. The discharge was copious, of a yellow colour and viscid. Dr. S. ordered a drachm and a half of the extract dissolved in four ounces of rose water, with the addition of thirty drops of laudanum, for three injections; one morning, noon, and night. The next day the discharge had entirely ceased, but to confirm the cure, two injections, and afterwards one a day, for a week, were used.—*Il Filiatre-Sebezio*, for Nov. and Dec., 1836.

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28. *Delirium Tremens treated with Carbonate of Potass.*—Dr. Stintzing has been in the habit for several years of employing this treatment. He gives the salt in doses of six to seven grains, with ten grains of calcined magnesia. He also used it in pleuritis, with benefit.—*Kleinert's Repertorium.*

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29. *Leucorrhœa cured by Iodine.*—Dr. Muller has recorded in the *Wochenschrift für die gesamnite Heilkunde*, No. 40, 1836, a case of obstinate and chronic leucorrhœa, cured in four weeks, by the ointment of hydrodate of potash, rubbed, morning and evening, on the internal surface of the thighs.

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30. M. Jadelot's *treatment of Scald-Head.*—According to the classification adopted by Biett, Rayer, Cazenave, and Schedel, the term "tinea" comprehends several cutaneous affections which have their seat in the hairy scalp. The form of *vesicle* constitutes the elementary lesion in one species, producing eczema. The other form appears as the result of a *pustular eruption*. The latter sometimes assumes a peculiar character, becoming assembled together in what are called "favi," and thus produce the true porrigo. The more mild forms of tinea constitute the two varieties of impetigo, which almost always attack both the scalp and the face at the same time. It is to the latter that the treatment of M. Jadelot is applicable, the tinea favosa generally requiring the much more tedious and expensive method of cure professed by the "Brothers Mahon," in whose hands it still remains a secret.

In many cases the simple forms of tinea readily yield to the treatment which is commonly employed; but it must be confessed that in many other cases they are extremely rebellious. In addition to this it may be remarked, that the uncertainty and length of the treatment in general use have very often the effect of preventing the children of the poorer class (to which they almost exclusively belong) from having recourse to any medical advice whatever. Under these circumstances it is desirable to find a method of treatment which shall at once be cheap, and not require the length of time that is generally employed. That of M. Jadelot, though but little known, has the merit of possessing the above advantages, and we can bear testimony to its efficacy, from having seen it employed with considerable success at the *Hospital des Enfans Malades.*

When the eruption presents any of the characters of an acute affection, M. Jadelot commences by combating these with cataplasms, with frequent lotions of some emollient fluid, (decoction of mallows, &c.,) with baths. When the chronic stage has arrived, he first removes the crusts by an application of poultices, continued for two or three days; the hair is then closely shaved, and this latter operation is performed twice a week during the course of the treatment.

The child's head must now be washed twice a day with the following lotion:—

Sulphuret of potassium, one drachm; *water*, one pint.

And after each ablution a thin layer of the following liniment should be applied over the diseased spots:—

℞. *Sulphuret of potassium*, three drachms; *soap*, two drachms; *oil of poppy*, six ounces; *oil of thyme*, one scruple.

Having liquefied the soap, dissolve the sulphuret of potassium in the oil, and then add the volatile oil. The liniment alone is often sufficient for the cure of recent cases of eczema and impetigo, the lotion, however, aids and abridges the treatment.

When the children, in addition to tinea, are affected with some other cutaneous eruption, it will be right to employ sulphur baths; or, when the parents are too poor to have recourse to the latter, ablution of the affected parts, with the sulphuretted lotion above mentioned, may be substituted in their place. Since the first of January, 1837, M. Jadelot has submitted fifteen girls, affected with tinea, resident in the hospital, and all the out-patients, to this method of treatment. The mean time required for a cure, which was generally obtained, varied from eight to fifteen days. In a single case the treatment was prolonged to two months.

As to *tinea favosa*, properly so called, the same method, employed in a few cases, was always attended with a notable improvement, and, probably, would have triumphed, at length, over the obstinacy of the complaint, had circumstances permitted its being continued for six, twelve, or even eighteen months, the time often required for the cure of this disease by the celebrated treatment of the "Brothers Mahon."—*Gaz. Méd. de Paris.*

SURGICAL PATHOLOGY AND OPERATIVE SURGERY.

31. *Pins taken from the Body.*—Two interesting examples of this are related in a recent number of the *London Medical and Surgical Journal*, (March 18th, 1837.) The first case was that of a woman who had a packet of pins in her left bosom, and was quietly walking along, when a drunken man rushed against her with such force, as to drive the contents of the package into her left bosom; a good deal of hemorrhage immediately set in; a professional gentleman removed a few of the pins, but was obliged to leave the greater quantity in the organ, they had entered so deeply. In a few months after, she was admitted into the hospital. A cicatrix existed upon the surface of the left mamma, at the point of entrance, also the cicatrices of three or four incisions upon the upper part of the arm, and as many more upon the left side of the trunk, and upon the upper and posterior part of the left lower extremity. During her stay in the hospital, whenever a pin was about coming to the surface, a slight degree of redness of the integuments always preceded, and pain was felt in the spot, particularly upon handling it; with the greatest certainty of finding a pin, an incision would then be made, and the pin found four or five lines from the surface, which was readily removed with a forceps. Before she left the hospital as many as twenty pins had been altogether removed, and that which was last removed, invariably made its appearance at a greater distance from the seat of the injury than the one which preceded it. Thus the last pins removed were from the dorsum of the left thumb, and the anterior part of the left ankle. In their course they invariably followed the intermuscular cellular intervals, and confined their route to the left side of the body, never passing the *median cellular boundary.*

In the other case the individual was pinning up some bed curtains previous to finishing them, and this operation requiring more hands than one pair, some of the servants volunteered their services, and amongst the rest a smart dapper footman. This gentleman's attention being more directed to the shape and figure of the principal, who was standing on a high stool with her mouth full of pins, than to any use he was present for, gently commenced paying his devoirs by giving a portion of her gluteous maximus (which was in the most inviting position for such an operation) a smart embrace between the finger and thumb of his right hand. She started, her foot slipped, her ankle was strained, but, what was of more serious consequence, she swallowed the pins! The poor girl suffered great pain and fright—a medical man was immediately sent for, who removed as many pins as he could from the bag of the pharynx. She was admitted into hospital. Several pins in addition were brought away; and she left, in about two months, in the full conviction that at least two dozen pins were distributed in various parts of her body. For a year afterwards she was a constant visiter at hospital, to have pins removed from various parts of her body. Unlike the first case, the

pins followed no regular boundary, which is to be accounted for by their entering the bag of the pharynx in every direction.

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32. *Treatment of Hydrocele by Injections of Iodine.*—M. VELPEAU prefers a solution of iodine to wine as an injection for the cure of hydrocele. He employs the tincture, in the proportion of one to two drachms to an ounce of water. Having emptied the cyst by puncture, he injects from one to four ounces of this liquid. It is not necessary to fill the tunica vaginalis, provided the tumour is pressed so that the medicament is applied to the whole of its interior. The fluid is then withdrawn, but without fearing to leave a small quantity. As it is not necessary to fill the cyst or warm the fluid, a common urethra syringe answers for the injection. If the hydrocele is large, it may be necessary to repeat the operation three or four times. After the injection the part swells for three or four days, but without causing fever or severe pain; resolution then takes place rapidly. M. V. has successfully treated twenty cases by this method.—*Archives Générales*, January, 1837.

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33. *Ligature of the Subclavian Artery, below the Clavicle.* By Signor CATANOSO. —A middle-aged man was admitted in Sept., 1835, into the hospital at Messina, with an extensive and deep cut in the axilla, which he had received three days before. He had fallen from a tree, and a sharp stump of a branch had penetrated deep into the armpit. The wound bled copiously at first, but had ceased spontaneously. The hæmorrhage had recurred several times. It was not suspected on the patient's admission, that the axillary artery had been wounded. The compresses, however, which had been applied over the wound, were continually wet with the oozing blood; and when some clots were removed, there was exposed a tolerably deep excavation, which had already begun to suppurate. On the 14th day after the accident, an alarming hæmorrhage took place, and Signor Catanoso determined to put a ligature round the subclavian artery, below the clavicle. A semicircular incision, pointing downwards, was made through the integuments, and the pectoral muscle having been then divided along the same line, the operator arrived at a tough inextricable fibro-cellular tissue, loaded with fat. This part of the dissection required great care, and occupied a long time. At length, the superior edge of the pectoralis minor muscle was reached, and the pulsations of the artery were felt. It was surrounded with its large accompanying vein, and the axillary plexus of nerves. These were at length separated from it with no small difficulty, and the aneurism needle, provided with one small but strong thread, was passed round it. When the ligature was tied, its two ends were cut off. The wound was then dressed simply, and the arm confined to the side. The pulse in the brachial artery at this time was not to be felt. At first, the wound appeared to be disposed to heal by the first intention; but in the course of two or three days it began to suppurate, and discharged a quantity of sanious offensive pus, mingled with some coagula of blood. The wound required to be enlarged to give a free issue to the discharge, and compresses and bandages were applied over every part, where the pus was disposed to collect. By the diligent use of these means, the state of the patient improved considerably, until the 19th day after the operation, when an arterial hæmorrhage took place. The clots being removed, the spot whence the blood proceeded, was filled with the styptic powder of Bonafoux, (composed of colophony, charcoal, and gum arabic,) and compresses of lint were then secured over it, by means of a bandage applied tightly round the shoulder. Fortunately the hæmorrhage did not return, and the wound slowly healed up. The cicatrization was not however complete for nearly four months.

Signor Catanoso has appended to the report of the preceding case a long and very elaborate memoir on the ligature of wounded arteries, and on the best method of securing the subclavian. We are much pleased to find that his views on all practical points entirely coincide with the opinions and practice of the best English surgeons. He seems to be well acquainted with some of the works of our most esteemed authors, as Hodgson, Cooper, Jones, and others. The operation of tying the artery below the clavicle is seldom attempted in the present day; the extreme difficulty of reaching the artery, and the circumstance of its being quite enveloped with large nerves and veins, are powerful objections to this method. It is much easier to reach the artery above the clavicle. Whether the

secondary hæmorrhage in the preceding case came from the tied trunk, or from some smaller vessel, is uncertain. We think the latter supposition the more probable, seeing that the bleeding ceased by the use of the styptic powder and of compresses.—*Med. Chirurg. Rev.*, April, 1837.

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34. *On Pessaries, and the Radical cure of Prolapsus Vaginæ et Uteri.* By Professor Dieffenbach.—This distinguished surgeon has long discontinued the use of pessaries in his own practice. To them he ascribes the occurrence of many diseases of the vagina and uterus, as well as of the neighbouring parts; and although he admits that there may be cases in which their use is likely to be beneficial, he considers that such cases are comparatively very rare. He was led to adopt the mode of practice which he here recommends, by seeing the case of a woman, the subject of prolapsus of the vagina and uterus, in whom parts of the vagina sloughed, during its state of prolapse: the uterus and vagina were replaced whilst granulation was going on, and the result was a complete cure of the disease. The first case with which Dieffenbach met, after this, on which he was determined to imitate the natural process, was that of a woman with prolapsus of the uterus, which could be easily replaced, but as easily prolapsed, when it was not kept in by a sponge.

The operation was thus performed. The bladder and rectum were emptied; the uterus was made to prolapse, and a portion of about the size and shape of a hen's egg was removed from the left side of the vagina, the sharper end of which was directed backwards, the opposite end forwards, and came in contact with the nymphæ. The fold was then seized with a pair of forceps, the uterus being previously pressed somewhat backwards to take off the tension of the vagina, and then dissected out with a slightly curved scalpel. The same process was repeated on the right side. The wound was cleansed, and at its hinder part two sutures were applied, the uterus was next replaced, and three other sutures were applied within the vagina. Had all the sutures been completed before the attempt was made to replace the uterus, it is possible that its reduction could not have been effected. Some little irritation followed, which ceased, however, on the removal of two of the sutures from either side. On the sixth day, all the sutures had separated.

Since the time at which Dieffenbach performed this operation, he has repeated it very often. He now employs a smaller number of sutures; usually only two, and never more than three. In many cases he uses no sutures at all, as the borders of the wound in the vagina mostly lie low in contact after the uterus has been replaced. The suture is required where there is great relaxation, and a want of irritability of the vaginal membrane; on the other hand, when the individual is robust and the vagina thick, it is better to dispense with sutures. When the surface of the vagina is mortified, it is necessary to fill it with charpie. Tepid mucilaginous injections should be used for some days, and after these, cold water. If, when cicatrization is going on, there is no evident narrowing of the vagina, a compress of charpie smeared with a resinous ointment, and the repeated application of the lapis infernalis, should be employed.

Dieffenbach has often removed the fold from the vagina after having replaced the uterus, by drawing a portion of the former outwards, and cutting it off by a knife with a sawing motion. This is a far easier mode of operating, but great care is necessary not to injure the bladder or rectum, which may happen if the fold of vagina, when tightly stretched by the forceps, should be cut off too near its base. Sutures are not employed in this case.

The position of the patient in the operation above described, should be the same as that for lithotomy. The state and relations of the rectum and bladder with the vagina and uterus should be ascertained, previous to the operation; of the former, by means of the finger, of the latter, by Desault's silver catheter. The catheter sometimes draws off a quantity of retained urine; the evacuation of the bladder being often rendered very difficult by the prolapse of the uterus.—*Medicinische Zeitung*, No. 31. 1836.

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35. *Ulceration of the Cæcum, and Abscess of the Right Iliac Fossa, communicating with the interior of the Bladder and producing the symptoms of Irritable Bladder.* By Henry James Johnson.—The following case is in some respects so remarkable

as to deserve to be recorded. The diseases of the urinary organs merit in a high degree the attention of the surgeon, for they are numerous, important, and not unfrequently obscure. It is only by a very careful examination of the urine, and by a comparison of its states with the other symptoms, that we can hope to guard ourselves against the many sources of error that interfere with the formation of a correct opinion.

The facts that have been elicited by recent investigations, with respect to the pathological changes that accompany an albuminous condition of the urine, are of a highly interesting character. It has been proved, beyond the possibility of doubt, that such an alteration of the urine, if permanent, and particularly if accompanied with prominent symptoms of disturbance of the bladder or the kidneys, is usually the consequence of organic changes in the latter. Of all the diseases of the kidney, and there are several, that lead to the secretion of albuminous urine, chronic inflammation, ending either in the mottled state described by Dr. Bright, or in abscesses in the cortical or tubular structure, is the most frequent.

It is singular to observe the variety displayed in the symptoms of what, for want of more exact information, we must consider chronic inflammation of the kidney. In one patient, the irritability of the bladder is excessive, and he seems to labour under all the miseries occasioned by the presence of a stone in it. In another patient, there is nothing which attracts his own, or, perhaps, the physician's attention to the urinary apparatus. The extent of lesion is no measure of the severity of symptoms, nor is severity of symptoms a positive indication of any lesion at all. I examined lately the body of a gentleman who died worn out by the cachexia induced by the abuse of mercury. His urine for many weeks before his death, was albuminous, and there was great irritability of the bladder. Yet, on dissection, I could detect no further disease in the kidney, than a very dubious injection of the mucous membrane of the pelvis of the ureter. Why one individual, affected with chronic inflammation of the kidney, should labour under severe symptoms of disturbance of the bladder—and why another, with equal or with greater renal disease, should not, are questions which it appears impossible to answer satisfactorily at present.

Contradictory as facts in some measure are, obscure as the symptoms of alterations of the kidney in their earlier stages must be owned in many cases to be, there are some phenomena which, taken in the aggregate, will not often deceive the acute and experienced observer.

When a patient complains of extreme frequency of making water—when he passes very small quantities at a time—when, in the act of micturition, and after it, he experiences a cutting pain at the end of the penis, and uneasiness referred to the perineum or the neck of the bladder—when the urine is decidedly albuminous, acid, and free from mucus—and when, on sounding the bladder, no stone is discovered in it, while examination by the rectum detects no change in the former organ or urethra—the surgeon may suspect, and his opinion will be very seldom a false one, that the symptoms depend on disease of the kidney.

It is not my object to go into the history of chronic inflammation of the kidney. Our knowledge of the pathological change in its commencement—of the symptoms that then mark it, if any positive symptoms do so—and of the treatment of the malady in all stages—is, unfortunately, both limited and vague. My reason for making these observations has been to clear the way for the appreciation of the characters of the case that I now proceed to describe. It will be seen that the case presented such symptoms as will generally justify us, in supposing that renal disease exists, yet the event shewed that there was none.

Case.—In the latter part of last summer, I was requested to see a respectable young man, a tradesman, who was then in the following condition.

He was much emaciated, and had all the external appearances of serious organic disease.

What he principally suffered from was frequency of micturition. He was obliged to make water every half hour—he passed little more than an ounce at a time—prior to the act of micturition he experienced uneasiness in the region of the bladder, and dull pain in the perineum—in the act, he had cutting pain at the end of the penis—and this continued for some little time after the last drops of urine had been voided. He was not aware that the stream of urine was ever

suddenly arrested, but once or twice there had been a tinge of blood in it, and the last drops were always discharged with tediousness and difficulty. He complained of no pain in the back, but referred to the urethra and the bladder as the principal seats of his uneasiness. Pressure over the pubes was productive of pain.

There was cough—the respiration was imperfect and hurried—he had at times what, from his description, appeared to be purulent expectoration—the chest sounded indifferently on percussion—there was bronchial respiration pretty generally in the upper lobe of each lung—and pectoriloquy existed under the right clavicle. Thus the general and the physical signs of phthisis were unequivocal. The pulse was frequent—there was a disposition to hectic—the bowels were rather irregular, being sometimes confined, and sometimes rather relaxed.

The urine was pale, rather turbid and acid. On applying nitric acid and heat, the presence of albumen was distinctly shewn, but there was in addition a sort of precipitate of rather opaque whitish flocculi, which were not unlike adipocire in *appearance.**

On introducing a catheter into the bladder, I found that the patient was able to empty it in the ordinary act of micturition. No calculus could be detected. The introduction of the instrument was attended with much spasm of the muscles of the bulb, and with considerable irritation and pain in the perineum and bladder. Whilst the instrument was in the latter, the finger was introduced into the rectum, and pressure made on the prostate and trigone. This occasioned comparatively little inconvenience.

The history of the case may be briefly told. For some months the patient had laboured under phthisical symptoms, for which he had been judiciously treated by his usual medical attendant, Dr. Thompson. These symptoms were relieved, when, suddenly, about two months before he applied to me, he was attacked with a frequent desire to make water, and with the other symptoms of irritation of the bladder. The means employed to relieve the disorder were attended with little benefit, and he had gradually been growing worse before he came under my observation. It is proper to observe that from the period of the accession of the urinary complaint, the thoracic had declined in prominence and in importance.

As the usual symptoms of disease of the bladder were not present—as I could not detect the existence of a calculus—and as the urine was albuminous, I conceived that the disease was probably in the kidney, and that the irritability of the bladder was merely symptomatic of that. Yet the suddenness of the access of the symptoms, the anomalous deposit in the urine, and the uneasiness on pressure in the region of the bladder above the pubes, were circumstances that I could not satisfactorily explain.

I applied leeches to the hypogastrium, and prescribed a combination of the tincture of henbane with the liquor opii sedativus and the liquor potassæ. Under these means, combined with rest in the recumbent posture, a regulated diet, and attention to the bowels, the pain on pressure above the pubes disappeared, and the frequency of micturition was rather diminished.

Various means of lessening the irritability of the bladder were tried. All medicines possessed of a diuretic property were injurious. The liquor potassæ, the infusion of the uva ursi, the infusion of buchu, severally increased both the frequency of micturition and the attendant uneasiness and pain. Narcotics, whether given by the mouth, or in the form of injection, or in that of suppository, were alone of any service. They reduced the times of making water to four or five in the day, and about as many in the night, and the quantity of water passed at once was augmented to a quarter, or even to half a pint. The irritability of the bladder varied from day to day, without adequate apparent cause. One night the patient would only be compelled to rise three or four times, on the next, he would, perhaps, be disturbed nine or ten times. The quantity of albumen contained in the urine gradually decreased, in this too there was much variation. On one day there would be a large albuminous precipitate, and two or

* I regret that this was not more carefully examined. I had intended to have requested some gentleman practically conversant with analytical chemistry, to ascertain the exact nature of this unusual deposit.

three days afterwards, the application of acid would merely render the urine rather cloudy.

Although, upon the whole, the urinary symptoms were much mitigated, and the sufferings of the patient materially diminished, he evidently grew weaker. It was between two and three months from my first seeing him, when he rather suddenly died. This was in the commencement of October last. I examined the body, with the assistance of Dr. Thompson, and of Mr. Oliver, one of my pupils.

The emaciation had gone to a great extent.

There were tubercles in both lungs, to the upper lobes of which they were confined. Some of the tubercles were softening, and in the apex of the right lung were two or three small vomicæ.

The kidneys were perfectly sound, and the ureters were unobstructed.

The bladder appeared, at first sight, healthy. There was no inflammation of its mucous membrane, no thickening of its parietes. But on its anterior wall, about the junction of its middle and upper third, was a small, round, fistulous opening, scarcely of the diameter of a common pea. The mucous membrane on the margin of the aperture was perceptibly injected, and the aperture itself had been evidently the result of ulceration. The aperture in the bladder communicated with a sinus in the cellular membrane between the organ and the abdominal muscles at their pubic insertion. From this point the sinus proceeded in the cellular membrane between the muscles on the right side and the peritoneum to the right iliac fossa, where it opened into a sort of abscess, partly formed by the cellular membrane there, partly by the cæcum, a large portion of the wall of which was destroyed by ulceration. Thus the bowel was freely laid open into the cellular membrane of the iliac fossa, from which a sort of winding abscess proceeded to communicate with the interior of the bladder. The mucous membrane of the cæcum, of the ileum at the ileo-colic valve, and of a small part of the ascending colon, was in a state of ulceration.

No other morbid appearance was discovered.

There can be little doubt of the real nature of this interesting case. It was originally one of ulceration of the mucous membrane of the cæcum, that affection being perhaps connected with the softening of pulmonary tubercles.* The ulceration extending through all the coats of the bowel, its interior was laid open into the cellular membrane of the iliac fossa, and a fæcal abscess resulted. The suppuration gradually travelled along the continuous cellular membrane, until it arrived at the front of the bladder. In this it occasioned ulceration, and the fistulous aperture that followed. It is probable that the sudden access of symptoms of irritation of the bladder, marked the period of its perforation.

Why the abscess should take this course, and why the aperture in the bladder should be so small, it would now be useless to inquire. It is clear that the albumen contained in the urine, was occasioned by the pus that found its way into the bladder.

But it is not so easy to determine the immediate cause of the irritability of that organ. Was it the existence of the small fistulous opening in it, or was it the discharge admitted into the bladder through the opening? The irritability of this organ, which results from disease of the kidney itself, is exceedingly capricious. Sometimes there is considerable disorganization of the kidney, and the urine is highly albuminous, without any, or with very little irritation of the bladder—sometimes this is excessive, with only moderate alteration of the kidney, and with only a small quantity of albumen in the urine. It is obvious that the careful observation of facts, and the accurate discrimination of particulars can alone explain these apparent inconsistencies, if they admit of satisfactory explanation at all.—*Med. Chirurg. Rev.* Jan. 7, 1837.

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36. *Nævi Materni cured by Chloride of Zinc.*—Mr. Calloway, of Guy's Hospital, has employed with considerable success, the chloride of zinc in the cure of cutaneous and subcutaneous nævi materni. It is rubbed on the part until the

* Ulceration of the mucous membrane of the termination of the ileum and commencement of the great intestine, is common in advanced phthisis, and is seen occasionally in its incipient stage.

skin becomes slightly discoloured, and repeated at intervals.—*British Ann. Med.*, May 19, 1837.

37. *Division of the Tendo Achillis for the relief of some of the deformities of the Foot.*—In our number for November, 1834, p. 247, we invited the attention of the profession to this operation, and detailed two cases in which it had been successfully performed by Dr. STROMEYER, of Hanover; and in our preceding number, p. 232, we noticed some cases more recently treated by M. Bouvier, by the same method.

At a meeting of the Royal Medical and Chirurgical Society, on the 28th March last, we learn that a paper on this subject was read by JOHN WHIPPLE, Esq., the report of which and of the discussion it gave rise to, are given in our cotemporary, the *British Annals of Medicine* for April; and as they possess much interest we are induced to transfer the report to our pages.

"Mr. Whipple relates two cases of individuals affected with deformity of the feet, on whom he had practised the above-named operation with entire relief. The first patient is a boy, who came under the care of the author in the last year, being then about 8 years of age. He was born healthy and perfect in every respect, but as soon as he was put upon his feet he was observed to pitch invariably upon the points of his toes. This undue extension of the feet gradually increased, in spite of various instrumental means of relief, which were for several years continued under the superintendence of gentlemen celebrated for the management of deformities, and the advice and assistance of medical men of eminence.

"When the author first saw him, he was incapable of locomotion without the aid of crutches, and even with this assistance he could only throw the lower extremities simultaneously forward during the artificial sustension of the body. It appearing to the author that the deformity was attributable neither to spinal irritation nor to any alteration in the form of the individual bones, but solely to deficient length in the muscles or their tendons, he resolved to divide the tendons of the gastrocnemii to obviate this condition. The operation was performed by passing a narrow, curved bistoury downwards and outwards, across the tendon about 2 inches above the os calcis, and dividing it in the withdrawal of the bistoury.

"The external wound healed by the following day; in three weeks a firm band of connexion was formed between the cut ends of the tendon, and in rather more than five weeks the patient could stand alone.

"At the time the author wrote, (six months from the operation,) the patient could walk three miles without assistance. Casts of the feet were exhibited, illustrative of the former and present positions of the feet.

"The second case was one of the more common forms of club-foot, in which the sole was turned towards the opposite ankle. In this case the operation was performed in the manner before described, and was attended with as great success.

"The tension of the tendons of the tibialis, anticus, and the tibialis posticus generally coexisting with the same condition in the gastrocnemius, the author thinks would in all cases soon yield after the division of the tendo achillis.

"Mr. Langstaff considered there was great danger in dividing tendonous structures, and that the club-foot in general could not be cured by a division of the tendo achillis.

"Dr. Little stated that he had suffered from deformity of his feet similar to the second case; he wore instruments until the age of 21. At that time, Dr. Stromeyer, of Hanover, divided the tendo achillis; the relief was satisfactory, for before the operation was performed he could not walk many yards without pain, and now he can walk 12 miles with pleasure. Dr. Stromeyer differs in his method of treatment from others, inasmuch as after the complete division of the tendo achillis, he allows the cut ends to unite by lymph before he commences extension of the foot; this practice he considers prevents the chances of inflammation or disagreeable consequences that might follow the operation. The chief difficulty in the treatment of these cases is in the extension of the ligaments about the joint, which is greater in some cases than in others; but in the first case, where the foot could be placed flat on the ground immediately after the opera-

tion, Dr. L. supposes it was not so severe as many of the cases we witness in the streets.

"Mr. Shaw exhibited three examples of deformity in the foot; in one case the tendons were dissected, and remained entire in their natural situation. Mr. S. observed, that in this case, and in another where the deformity was still more striking, the shape of the bones was natural; he had also examined the bone in congenital club-foot, and found them in a natural shape; from this circumstance, it was extremely probable that even the worst deformed cases might be cured by proper means. Mr. S. objected to the division of tendons at the sole of the foot, in consequence of a liability to be drawn out of their fasciæ, and followed by injurious consequences. In cases where that practice was requisite, he would prefer the employment of suitable means to extend the ligaments and muscles.

"Mr. Langstaff inquired whether Dr. Little had seen any dangerous consequences follow the division of tendons; for Mr. L. had seen instances in which the tendons were divided, either by accident or design, and were followed by severe tetanic symptoms.

"Dr. Little had never known any serious consequences follow the division of tendons; he had seen 50 or 60 cases operated upon, and in some of these more than one tendon was divided. Regarding the division of the flexors of the foot, to which Mr. Shaw objected, that could be accomplished in the same situation where the tendo achillis was cut, and he knew of no objection against dividing the tendon of the tibialis anticus muscle. Age, Dr. L. observed, was no barrier to the operation. Stromeyer once operated on a female at the age of 53, in whom the deformity had existed since the 3d year, and that case was successful. The chief difficulty which Dr. L. had found, was the resistance afforded by the tibialis posticus, and the flexors of the foot; to obviate this, an apparatus was constructed, but the pressure of the bandages brought on sloughing, and it was abaned on that account.

"Mr. Macilwain considers the method of Stromeyer calculated to relieve many of those cases which have hitherto been neglected. With regard to the danger which we have been taught to anticipate from the division of tendons, the idea probably originated in the circumstance that contusions and injuries of tendons or fasciæ are followed by severe consequences, as also happens in other parts of low vitality; but these are widely different from the simple division by means of proper instruments.

"Dr. Little, while at Berlin, had an opportunity of ascertaining that the club-foot deformity prevailed to the same extent in the higher as in the lower classes. In reviewing the history of the treatment of club-foot, a circumstance confirms the observations of Mr. Macilwain, viz., that the danger in dividing tendons depends on the manner in which it is accomplished. A surgeon at Frankfort, 40 years ago, completely divided the tendo achillis, and his cases did well. Another surgeon preferred only partially dividing that tendon for about two-thirds, and the other third he stretched by an extending apparatus, the consequence was suppuration, ulceration, and fatal mischief. Stromeyer commenced his practice by completely dividing the tendon; he used a small bistoury, and the opening made was not larger than the blade of the instrument; his cases were all successful. Delpech, in 1824, had a different practice, he made incisions on each side the tendo achillis, and cut outwards; his cases were followed by unfavourable results. On this account he incurred the censure of the French journals, while Stromeyer was also attacked on account of his practice approaching that of a punctured wound.

"Mr. Langstaff and Mr. Davis have seen instances where gunshot and other wounds of tendonous parts were followed by dangerous symptoms; they consider the best practice is, in these cases, to completely incise the lacerated wound.

"Dr. Little states, that Stromeyer has attempted straightening the leg in some cases by dividing the tendons of the biceps and semi-tendonosus muscles; and in horses where a contracted state of the leg prevented the whole of the hoof being placed on the ground, the division of the flexor tendons has been successful.

"Mr. Davis has seen two horses where this operation succeeded.

"The president inquired what was the average time required before the treatment was completed.

"Dr. Little replied, in children it is about three weeks before the foot can be

placed on the ground, but when the ligaments are stiff, it requires five or six weeks; afterwards the limb requires artificial support for three months, by means of a steel rod, and it should be strengthened sometimes by means of whalebone. It is of great advantage to operate early in congenital cases, for the act of walking so strengthens the ligaments, and changes the position of the bones, that the treatment of the deformity is rendered more difficult. The youngest case in which Stromeyer operated was a child 11 or 13 months old."

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38. *Case of Lithotripsy. Inability to withdraw the instrument from the Urethra.*—A man, æt. 57, of good constitution, was admitted into the Hotel Dieu under M. Roux, with symptoms of stone in the bladder, which he had experienced for nearly a year. He was sounded and the stone felt; on which it was resolved to perform the operation of lithotripsy. The first seven operations were successful, the stone each time being laid hold of and crushed; but, at the eighth time, the operator laid hold of a fragment with the *brise-pierre*, and tried to extract it whole through the urethra, instead of crushing it, when, on coming to the spongy part of the urethra, the instrument became fixed, so that it could not be moved either backwards or forwards. As it was necessary to extricate the instrument, the surgeon resolved at once to make an incision, like a button-hole (*boutonnière*) of the penis, and executed it with his usual skill, at the spot where the point of the instrument was felt. He extracted the fragment by this opening, after which he was able to withdraw the instrument. The calculus was found firmly fixed in the opening of one of the branches. The patient remained in the hospital for about ten days, after which he left it, not choosing to submit to another operation, and probably retaining in his bladder some remains of the calculus.

We ought not, then, in lithotripsy, to try to extract a fragment without first crushing it; for the instrument cannot be withdrawn from the bladder unless it is perfectly closed; and in order to withdraw it without injuring the parts, we are instructed first to replace the hammer. Students who practise lithotripsy are aware of this; for in the dead body, whenever they try to withdraw the *brise-pierre* partly shut, or not completely replaced, it is always stopped in the passage of the urethra. This practice can only be justified in a certain degree when the operator employs the pincers having three branches; and then he must be sure that the fragment is not large. As to the artificial opening in the penis, we cannot tell beforehand whether it will heal without leaving a fistula or not. The accident of M. Roux will show the importance of disengaging the instrument before withdrawing it. A similar accident happened at Berlin a few years ago, and we believe the writer might have added, in London also.—*London Med. Gaz., April*, 1837, from *Gazette des Hôpitaux.*

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39. *Compound Luxation of the Humerus.*—This is a very rare accident. Sir Astley Cooper has met with but two instances; and Mr. Samuel Cooper, in his Surgical Dictionary, mentions only a single example of it.

So few cases being on record, a notice of one recently communicated to the Lancet, (4th March, 1837) by Mr. P. T. Scott, may prove interesting. The subject of this case was a farmer, 14 years of age, who was thrown from a horse, and, owing to the halter being wound round his fore-arm, was drawn on the ground for the space of ten yards. When seen by Mr. T. and Mr. Mallard, forty minutes after the accident, the os humeri was lying exposed on the anterior part of the chest, over the pectoral muscle of that side. An immense quantity of blood had been lost through the wound in the axilla, and the integuments were greatly lacerated. Amputation was at first thought necessary, but Mr. Thompson, who was called in consultation, being of opinion that the limb might be saved, reduction was attempted and accomplished in the usual manner with great ease. Lint was placed in the axilla to cover the wound; a roller was passed around the body, including the limb, and the fore-arm was suspended by a handkerchief, after which the patient was put to bed, and a composing draught was administered. It would be unnecessary to give the daily progress of the case; suffice it to say, that the antiphlogistic regimen being enforced, very little fever, or inflammation, followed. In a fortnight a small collection of pus took place, which was gradually absorbed. From this period no untoward symptom was manifested, the wound being cleaned, and simple dressing applied daily. In two months, by generous

diet, he recovered strength sufficient to go out; and in less than three months walked every morning to our surgery, a distance of three miles, to have attention paid to his wound, which was then very small, and disappeared entirely in a fortnight. The fore-arm until that time had been supported by a splint and sling, which were now laid aside, as the elbow-joint was moved with difficulty; but passive motion, together with the use of stimulating liniments, soon restored to him its proper use.

He now, Mr. Scott, states, thirteen months from the time of the accident, possesses as useful a shoulder as at any period prior to the injury; its motion not being impeded, except so far as regards inability to raise his arm over his head. —*Lancet*, for *March* 4, 1837.

OPHTHALMOLOGY.

40. *Treatment of some forms of acute Ophthalmia by the application of successive Blisters upon the Cutaneous Surface of the Eyelids.*—The sudden disappearance, on the occurrence of erysipelas of the face, of some forms of ophthalmia, which had long resisted the usual means of treatment, first led M. Velpeau to the use of blisters in ophthalmia, applied as near as possible to the inflamed part, and therefore upon the eyelids. The advantages resulting from their use, were found to be very considerable, and to be most evident in those cases where the inflamed vessels were not the same as those the action of which was increased by the use of the blisters; thus, e. g. inflammation of the cornea, the vessels of which are derived from the ciliary branches of the ophthalmic artery, is more benefitted by blisters than inflammation of the internal surface of the eyelids, which are supplied by the palpebral branches, and which are directly acted upon by the new cause of irritation. M. Velpeau therefore thinks that blisters applied upon the eyelids will be of the most service in those cases where the inflammation is nourished by the muscular branches of the ophthalmic artery, the ciliary and central of the retina. M. Velpeau has now employed blisters in these cases more than fifty times. In no case have they increased the evil which they were intended to remedy, they have not increased the pain, they leave no indelible marks upon the face, and the only evil effect which has been observed to follow them, is an occasional stye.

The immediate advantages following blisters in such cases, are: diminution of headache, if it previously existed; diminution of lachrymation and intolerance of light, of redness and thickness of the ocular conjunctiva; cleansing of ulcers; lessening of the cloudiness and suffusion of the cornea and aqueous tumour, of effusions of pus or lymph, or at least a discontinuance of their formation, together with improvement in the general state of the patient.

But in many cases, there is a class of secondary effects, which do not clearly manifest themselves before the blistered surface begins to heal. Of these, the most remarkable is the diminution of the cloudiness of the transparent parts of the eye. If lymph be deposited at the bottom of an ulcer; in the substance of the cornea; under the form of hypopium; in layers of masses, it is equally under the power of the blister, disappears as it were by enchantment; so that the clarification of the cornea and aqueous tumour appears to be the special object of the blister. Another effect, almost as constant but not so rapid as the preceding, is the extinction of inflammation in the conjunctiva, then in the cornea. If there is chemosis, this gradually diminishes. Should ulcers be formed on the cornea, when the inflammation is calmed, there will require other remedies to hasten their cicatrization. Blisters applied in front of the orbit are not beneficial in all forms of ophthalmia. They are of especial advantage in favouring the absorption of matters which tend to obscure the clearness of the transparent media of the eye; and their use is indicated in acute inflammations, foreign to the eyelids; in inflammations of the various tunics of the eye, and of the parts contained within the orbits. In ophthalmias which are seated in the fibro-serous tissue of the eye, i. e. in rheumatic ophthalmias, the effects of blisters are more complete than in any other cases, whatever may be the intensity of the inflammation. No topical application is so efficacious. The disease is, as it were, extinguished be-

neath the blister, and ordinarily disappears entirely by the use of one or two blisters in the space of from eight to fifteen days. The catarrho-rheumatic ophthalmia is still more under the influence of the blisters, applied upon the eyelids. M. Velpeau concludes his paper by hinting at the possible advantage to be derived from blisters in the earliest period of cataract; he grounds the idea of their possible utility, on the influence which they appear to possess of restoring those parts of the eye which have become cloudy, to their natural transparency; but the notion is supported by no facts.—*British and Foreign Med. Rev.*, from *Journal des Connaissances Médico-Chirurgicales.* September, 1836.

41. *Professor Rust's method of operating for Cataract by reclination.*—When Professor Rust was a student at the University of Krakau, he became acquainted with an empiric who was celebrated for his success in operating for cataract, although totally unacquainted with the anatomy of the eye, or the general principles of surgery. This man operated with a *round* needle, mounted on a clumsy, metallic handle; yet seldom his cases presented those secondary accidents of inflammation, &c., under which the operations of more skilful surgeons so often fail. His acquaintance with the young student gave him an opportunity of acquiring the anatomical knowledge in which he was deficient, and after a retirement of some months he sallied forth on another campaign, proud in his increased knowledge, and armed with fine, double-edged needles of the most approved construction. But the quack's good fortune had forsaken him; his operations were now followed by a multitude of accidents which he had never before witnessed, and several of his patients lost their eyes from inflammation and suppuration. Under these untoward circumstances, he prudently determined to abandon the path of science, lay aside his double-edged instruments, and resume his old, clumsy, blunt, needle. His operations were then as successful as they had been in the first instance. The reflective mind of young Rust was excited by this remarkable coincidence, and he soon discovered that the whole secret depended on the man's employing a *round* needle, which never produces the same degree of irritation as the cutting needles employed by most surgeons. Further experience confirmed the truth of this fact, and led Dr. Rust to propose the following method of operating, which he has since practised with so much success himself.

Method.—The instrument used by Professor Rust is a fine, round needle, flattened a little at the point only, for the purpose of penetrating the tunics of the eye, but not broader here, or double-edged; half the blade, next the handle, is gilt, or otherwise stained, that the operator may be able to judge more accurately how far the needle penetrates into the eye. The patient's head being properly placed, and fixed by an assistant, the operator depresses the under eyelid, and having placed his needle a little in front of, and parallel to, the cornea, with the point corresponding with the centre of the cataract, he thus estimates how much of the blade must penetrate the eye before the point can reach the centre of the lens. Having well calculated this, he passes the point of his needle into the conjunctiva (in a direction which would traverse the optic nerve if continued,) about one line behind the edge of the cornea, and from half to a whole line below the transverse diameter of the eye, and sinks it into the eye until it has reached the depth calculated on after the first manœuvre. The handle of the instrument is now directed backwards, which brings the point forwards, and makes it penetrate to the depth of half a line; the posterior surface of the capsule, and the middle of the lens, is at the back part. Having thus penetrated the lens, it remains to recline it, which Professor Rust executes by simply turning the handle of the needle, and bringing it a little back; in this way the anterior surface of the lens is directed outwards and downwards; its posterior surface inwards and upwards; its upper edge forwards, and its under one backwards. The operator now endeavours to push the depressed and reclined lens backwards and outwards, by bringing the handle of the needle forwards and a little inwards towards the nose; this done, he withdraws the instrument in the direction it has now assumed. Unless the latter precaution be taken, we run the risk of bringing the lens again forwards; to prevent which, when the operation is finished, Professor Rust sometimes dashes cold water suddenly against the patient's face, while he himself holds the needle fixed in the direction judged most convenient; the patient suddenly draws back his head, and in this manner withdraws the lens from the point of the needle.

The operation now described has the advantage of being extremely simple, and is seldom followed by any secondary accidents; the ciliary processes are uninjured, and as the capsule is opened, the chance of the lens being absorbed is much increased.

The operation of Dr. Rust is liable to two objections; First, that the operator cannot see what he does when once the point of the instrument is introduced. However, this is of less consequence, since the depth to which the needle penetrates can be estimated with so much accuracy. Secondly, that simple reclination of the diseased lens is never sufficient to produce absorption of that body, which must be moved to and fro in the vitreous humour. In the uniform success which attends Professor Rust's method of operating, is to be found the best answer to this latter objection.—*Lancet*, for March 11th, 1837.

MIDWIFERY.

42. *On the length of the Umbilical Cord and its mechanical influence upon Parturition.*—Our *Dublin* cotemporary for March last, contains an interesting paper on this subject by Dr. F. CHURCHILL, Physician to the Western Lying-in Hospital. After noticing contradictory statements of writers on the subject, the author quotes the observations of Dr. Adellmann of Fulda, and Professor Henne of Konigsberg.

Out of 49 cases Dr. Adellmann found that in 3 cases the length of the cord was 14 inches; in 6 cases 15 inches; in 12 cases 16 inches; in 1 case 17 inches; in 17 cases 18 inches; in 4 cases 19 inches; in 5 cases 20 inches; in 1 case 21 inches.

Out of 130 cases Professor Henne found that in 1 case the length of the cord was 13 inches; in 7 cases 15 inches; in 2 cases 16 inches; in 4 cases 17 inches; in 10 cases 18 inches; in 8 cases 19 inches; in 16 cases 20 inches; in 11 cases 21 inches; in 21 cases 22 inches; in 9 cases 23 inches; in 13 cases 24 inches; in 8 cases 25 inches; in 3 cases 26 inches; in 4 cases 27 inches; in 4 cases 28 inches; in 1 case 29 inches; in 2 cases 30 inches; in 3 cases 31 inches; in 1 case 32 inches; in 2 cases 34 inches.

For his own satisfaction, and as a test of the correctness of the authorities, Dr. C. had the funis of the child measured in every case attended from the Lying-in Hospital, and the following is the result:

Out of 212 cases, he found that in 6 cases the cord measured 12 inches; in 1 case 13 inches; in 7 cases 14 inches; in 7 cases 15 inches; in 15 cases 16 inches; in 4 cases 21 inches; in 75 cases 18 iuches; in 10 cases 20 inches; in 4 cases 21 inches; in 9 cases 22 inches; in 49 cases 24 inches; in 2 cases 26 inches; in 5 cases 28 inches; in 1 case 29 inches; in 8 cases 30 inches; in 1 case 34 inches; in 5 cases 36 inches; in 1 case 46 inches; in 1 case 48 inches; in 1 case 54 inches.

Thus, out of 391 cases, there occurred six of one foot long, and none under that length. The length which occurred most frequently was eighteen inches, and the next in frequency two feet; so that the estimates of authors are not quite correct. There is but one example in the whole number of a cord exceeding forty-eight inches.

"We may conclude, I think," says Dr. C., "that cords only ten inches long must be comparatively very rare, (although I have quoted the record of four such,) since not one occurred out of 391 cases. Now, as to the practical effects of these unusually short cords, it should be borne in mind, that (in head presentations) as soon as the breech passes through the lower outlet, all stress upon the cord may be and is taken off by the child's lying with its abdomen close to the vulva; and that the length required is such as will reach from the insertion of the placenta to the vulva, and from the breech of the child, when at the vulva, to its umbilicus. A cord of this length will, it is clear, allow the child to be born safely. What, then, is this length? I have recorded four observations of different authors, in the former part of this paper, of children being delivered without accident, whose cords were only ten inches long. But suppose in these cases that the placentæ were not situated at the most distant point of the uterus, that they were inserted into the side instead of the fundus, we may allow three inches more as the limit of the length necessary, and finally conclude, that a cord of thirteen inches long

will always suffice for the delivery of the child, and that one of ten will also, under favourable circumstances.* This calculation entirely refutes the notion of delay in labour arising from this cause, unless, at least, the cord be under ten inches, and I am not aware of any example of this being on record."

Out of 190 cases, the cord was round the neck in 52, or in more than one-fourth. The shortest cord which was coiled round the neck, was eighteen inches. This occurred but twice in 75 cases. It was never under two feet when coiled twice round: nor under three when coiled three times round. It was coiled four times round in one of three feet; and four times in one case of fifty-four inches. Whenever the cord exceeded two feet in length, it was generally round the neck. Deducting the length of the coil in the shortest cord, and thirteen inches will be left, which, as has already been shown, is amply sufficient for delivery. Thus, even in the most unfavourable instance, there would be no mechanical interference with parturition, nor any danger to the child. Where coiling was observed most frequently, (twenty-four inches,) the part remaining free was equal to the length of an ordinary cord, and such was the fact when the cord was twisted more than once round. It appears, therefore, that the coiling round the neck is a consequence of the excessive length of the funis, and that the number of coils is in proportion to that length.

As to the practical application of these observations, a few words will suffice. By almost all authors we are impressed with the necessity of untwisting the coil around the neck, by slipping it over the head or shoulders, in order to give the child the benefit of the full length of the cord. In many cases this is very difficult; in some, it is impossible. We have seen that in by far the majority of instances this is perfectly unnecessary, as no evil consequences can follow, there remaining, allowing for the coil, an adequate portion of the cord free. The cord should in all cases be drawn down a little, to relieve the stress upon it, and to loosen the part round the neck; but, except in a very few cases, more will not be necessary.

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43. *Case of Extra-uterine Pregnancy, which occasioned a complete retroversion of the Uterus, and did not terminate fatally.* By Professor Drejer.—Communicated to the Royal Medical Society of Copenhagen, on the 21st of February, 1833.

A woman, aged 36, of a thin and slender make, who in her 19th year had given birth to twins, and subsequently to two other children, the last of which was born 13 years before, was seized in June, 1831, after having passed one menstrual period without the occurrence of the usual discharge, with a violent spasmodic attack, attended with loss of consciousness. Antispasmodic medicines were administered, under the use of which she soon recovered. After the lapse of several months, during which the catamenia still continued absent, the epileptic paroxysm recurred, for which she was again successfully treated with antispasmodics. At this period the abdomen was tumid, and the breasts enlarged, and she had no doubt that she was in the fourth month of pregnancy. Her health continued tolerably good until the 25th of November, when she applied to Dr. Drejer on account of crampy pains in the belly and thighs. She was feverish, and had quite the appearance of having attained the 7th month of pregnancy; the breasts contained milk, and the movements of the child were perceptible. The symptoms of which she complained were relieved by pulvis refrigerans conjoined with musk, but some days afterwards suppression of urine came on, attended with straining and violent pain, and it was found exceedingly difficult to introduce the catheter, the orifice of the urethra being completely behind the pubis (a circumstance, as Dr. Neuerman remarks, which is regarded by Mende as a characteristic sign of retroversion of the uterus). By holding the instrument in a direction nearly perpendicular, it was at length passed into the bladder, much dark-coloured urine was drawn off, and alleviation of the symptoms followed. On examination through the vagina and rectum, the uterus was found to be completely retroverted; the os tincæ, raised above the pubis, could scarcely be reached by the finger, and a tumour was felt occupying the posterior part of the pelvic

* It will be seen that in this calculation I am assuming that the head presents. A breech presentation would certainly require a greater length of cord, and in some cases might occasion some difficulty, and require division of the cord before the entire expulsion of the child. But such cases must be very rare indeed, since I have not met with a single example on record.

cavity; it had somewhat compressed the rectum, and yielded little to pressure in consequence of a superincumbent weight. Dr. Drejer was at first inclined to believe that his patient was not pregnant, but was convinced of the contrary by distinctly feeling the movements of the child through the abdominal parietes, and as it was clear that the tumour in the pelvis was the fundus uteri, and that it was impossible the os tincæ could occupy such a situation at the period of gestation to which this woman had arrived, he inferred that the case was one of extra-uterine pregnancy.*

The urine was drawn off twice a day, the accumulation of fæces obviated by the use of Glauber's salt, and, at the end of 14 days, the fundus uteri had evidently ascended towards the sacral promontory, and the os tincæ was somewhat lower; the excretions also were passed without assistance, and in the course of another fortnight, the uterus had nearly resumed its normal position. Gradually the movements of the child ceased. In January, 1832, she had painful bearing-down efforts, accompanied by uterine hemorrhage, but these symptoms vanished in a few days, and she at length so far regained her health as to be able to leave her bed, complaining only of weakness. In February, at the period when she had calculated on being confined, violent hemorrhage and bearing-down pains again came on, but they ceased as before in the course of a few days, after which the distension of the belly and breasts diminished. The hard tumour, which still remained in the abdomen, extended from the symphysis pubis to beneath the false ribs on the right side, where Dr. Drejer believed he could feel the breech of the fœtus, the head appearing to lie below, and the back along the right side and anteriorly; a position which led to the supposition that the fœtus was sacculated in the abdomen, and not contained either in the right ovary or its fallopian tube. In April the catamenia appeared, and afterwards continued to recur at regular intervals; the woman is now in good health, attends to her business, makes long journeys on foot, and is not incommoded by the tumour farther than that it is occasionally the seat of shooting pains, particularly during the menstrual periods. She is also subject to hysteria. She was made acquainted with her situation, and assured that she might, notwithstanding, reach an advanced age.—*Med. Chirurg. Rev.*, January, 1837.

EPIDEMICS—INFLUENZA.

44. *Influenza.*—This affection, which we noticed in our preceding number as having prevailed last winter in certain parts of Europe, seems to have had a very extensive range. It is said to have made its appearance at Sidney, New South Wales, early in October, 1836, and at the Cape of Good Hope on the first of the succeeding month. It broke out in the northern parts of Scotland before the end of the year, and was prevalent somewhat earlier in the countries bordering on the Baltic; so that its occurrence there and at New South Wales was cotemporaneous.

Our readers are in possession of pretty full descriptions of the epidemic as it appeared in England, and we shall now lay before them the best accounts of it that have reached us of the phenomena it presented in France, Belgium, and Denmark.

45. *Influenza in France.—La Lancette Francaise*, of the 28th of February last, contains a highly interesting lecture by M. Andral, on the epidemic, as it appeared in France, from which we extract the following observations:

The disease occurred at all ages and in both sexes. There were few cases, however, in children under two years; a large number of twelve years were attacked, but the greater number of those affected were adults; old persons were not exempted from it; it has been observed in individuals of 85 years of age. It

* Dr. Drejer does not seem to be aware of the fact that the uterus may remain in a certain degree of mal-position, with the os uteri still directed to, or raised above the pubis, even to the end of gestation. A case related by Dr. Merriman in the Med. and Phys. Jour. Vol. XVI. page 388, would convince him of this. We do not, however, impugn the accuracy of his diagnosis.—R. Thacker.

occurred among all ranks and conditions of society, and in every locality. It was not observed to be more prevalent or severe in populous or crowded situations, or where the rules of hygiene are less observed than in those quarters of the city inhabited by the rich. In one house sometimes a single individual was affected, all the rest escaping the disease; this, however, was very rarely the case. In other dwellings all the inhabitants have been attacked, either simultaneously or successively. A very striking feature of the influenza is a certain disturbance of ennervation, especially of sensibility and motility, and more rarely of the intellect. From the very onset there is pain of the head, which oppresses the patient, and almost prevents him from moving the part. It is chiefly felt about the centre of the forehead, and is of a lancinating character, and accompanied with a sensation of heat or of extreme pressure, with a sense of stupor and vertigo. Some patients are so much affected by it, as to declare if it continues they shall perish of a brain fever or an attack of apoplexy. The face at the same time is red, the eyes injected and watery; the ears are the seat of a distressing humming sound. Some patients complain of a prickling in different parts of the surface, especially of the palms of the hands, which in many cases present nothing remarkable to the sight or touch, while in others they are red, swollen, and erythematous, particularly towards the junction of the last phalanges with the metacarpus. In others the pain was less superficial, darting through the substance, as it were, of the limbs; in others the pains were of a contusive character, and principally felt about the larger joints. The pains in general were experienced from the onset of the disease. The pain of the head and stiffness of the limbs, were in many cases the only symptoms that the patients experienced; in other cases, there was in addition, a sense of contraction of the chest, preventing a full dilatation of its parietes, and threatening suffocation; the latter phenomena did not assume in any case a very alarming aspect.

In almost every instance there took place a sudden depression of the muscular strength, which continued often during the whole course of the disease, and persisted even after the disappearance of the other symptoms. Very painful and distressing cramps occurred in some cases, but happily in very few. The intellect, excepting in a very few instances, presented nothing remarkable; the patients were, it is true, greatly depressed, but otherwise their mental faculties were in no degree impaired. In some who suffered from intense febrile excitement a temporary delirium was observed. Sleeplessness was in a great number of cases very obstinate.

In the greater number of cases the tongue was broad, humid, and covered with a whitish coating; in some, however, it was red and dry. The posterior part of the fauces presented nothing remarkable. The pain in the throat of which the patient complained had not its seat in the pharynx, but in the air passages. Deglutition was always easy. The appetite failed during the febrile stage, and this inappitency often continued after the removal of the other morbid phenomena. There was in general but slight thirst. Some patients experienced a sense of weight at the epigastrium, but rarely intense pain. The abdomen has remained, in by far the greater number of cases, supple and without tenderness. The evacuations by stool were natural; constipation was a more frequent symptom than diarrhœa. In some cases, either as an effect of the disease itself or of its complications, a very obstinate vomiting and a copious diarrhœa, with colicky pains, were observed. This was rarely the case at Paris, but at Passy it appears to have been more common.

The mucous membrane of the nares was in a great number of instances the seat of a mucous flux and of hemorrhages. The latter were frequently slight, but in some cases sufficiently profuse to require the plugging up of the nasal fossæ. The voice was almost always altered. More or less hoarseness, with pain along the course of the larynx and trachea, were characteristic symptoms of the epidemic. Cough was rarely absent; the attack frequently commenced with it; it was very obstinate in some patients, and persisted for a long time after the disappearance of the other symptoms. It frequently occurred in paroxysms, which were very painful and fatiguing. It was sometimes dry, and at others accompanied with an expectoration of a gluey, whitish and transparent matter, containing globules of air. In some cases the sputa were more consistent and opaque, and resembled those we observe towards the termination of an acute

bronchitis. In such cases the cough continued for a longer period; it was occasionally accompanied with a sense of strangulation so intense as to seem to threaten asphyxia. The cough had its origin in the larynx and trachea, and rarely proceeded from the bronchi. Thus, in by far the greater number of instances, auscultation and percussion of the thorax gave only negative indications. In some cases, nevertheless, an engorgement and thickening of the mucous membrane was shown to exist by a dry and sonorous rhonchus.

Sometimes the respiration was normal; at others, there was great dyspnœa. In some cases the impediment to respiration arose from a very acute pain in the parietes of the chest, which prevented its dilatation. When the dyspnœa was severe, there took place an alteration of the features to a greater or less extent, with violet tint of the face and coldness of the extremities. But these symptoms were soon removed by energetic treatment. Death never resulted from them. The oppression of the chest increased considerably where a secondary inflammation of the pleura and of the lungs has manifested itself. It is proper to notice as another cause of dyspnœa, the pseudo-membranous inflammation of the bronchii pointed out by M. Nonat. This is by no means rare, and it would be more commonly detected if greater care were taken to examine the final ramifications of the bronchii. In old persons a very profuse secretion took place from the bronchial mucous membrane, which could not be expelled by the cough, and gave to the case all the characteristics of catarrhus suffocativus.

In a few instances the influenza was unattended with fever; but in the greater number of cases the skin was hot, occasionally dry, but more frequently moist; the pulse was frequent, developed and rebounding; the action of the heart being strong and energetic. The fever continued from two to five days; it rarely lasted beyond the latter period; when it shows itself after the fifth day, we should suspect an inflammation of the bronchi or some other portion of the respiratory apparatus. In some patients a singular tendency to lypothemia and syncope was observed. The perspiration was in some cases very abundant; it commenced with the fever, continued during its presence, and persisted after its cessation. The abundance of the perspiration recalled to our memories the *sweating sickness*. Sometimes the surface presented only a simple moisture; in a certain number of cases a very copious discharge from the skin occurred about the second or third day, at the period when the febrile excitement ceased. The perspiration was occasionally accompanied with a miliary eruption.

We may distinguish in the course of the influenza three periods. The first, which is seldom wanting, is characterized by cough, pain in the throat, cephalalgia, and contusive pains in the limbs. Cough and pain in the throat, of themselves, do not constitute a real case of the disease; there must exist at the same time the several nervous symptoms already referred to. In difficult cases, nervous, thoracic or abdominal symptoms may predominate. The duration of the first period is from one to two days; when it is wanting the disease commences with the second or febrile period. This is characterized by fever, accompanied with most of the symptoms which we have described as its concomitants. This period succeeds often in an insensible manner to the former, but more generally it occurs suddenly, either subsequent to, or without being preceded, by the first. The cephalalgia augments as well as the debility and prostration; some patients are struck down, as it were, by lightning, either while walking or attending to their usual occupations. This period continues for about the same period as the fever of measles or scarlatina.

The third period, called apyretic, is distinguished by the cessation of fever, but generally certain of the morbid phenomena of the proceeding periods persist; these phenomena have especial reference to the functions of the central thoracic and abdominal organs. Thus we have pain of the head, and depression; and a cough, which continues, in general, for a considerable period. Although in the preceding stages the stomach presented no indications of disease, we find not frequently that its functions are disordered. The tongue is covered with a thick coating; the mouth is pasty and bitter; the thirst is considerable. If the patients partake of food, it appears to them to have a disagreeable taste; after its ingestion the stomach swells and becomes the seat of a disagreeable sense of weight; with these symptoms constipation of the bowels is usually conjoined. The duration of the third period is very variable; it sometimes termi-

nates at the end of two or three days, at others it continues for a longer or shorter period.

In Paris, during the epidemic of the present spring, the influenza terminated favourably in the great majority of cases. Where death occurred, it was the result of complications, such as pneumonia, general bronchitis, &c. It was, however, a very serious disease when it attacked those labouring under chronic inflammation of the chest.

Dissection has not discovered in the bodies of those who died of the disease, other lesions than those referable to the disease with which the influenza was complicated.

M. Andral does not consider the influenza to be either a laryngitis, tracheitis, or pulmonary catarrh; either of these affections may occur in patients labouring under the disease, and constitute one of the principal elements of the disease, but they do not constitute of themselves the influenza. This is a general disease, the nature and course of which, as in most of the epidemic affections which occur at variable intervals, are both unknown.

The treatment will vary according to the symptoms. When indications of cerebral congestion, with more or less febrile excitement present themselves, we should not hesitate to open a vein, and at the same time apply revulsives to the extremities. If the fever is moderate, the pain in the head inconsiderable, and the oppression slight, rest and diluent drinks will be sufficient. If the mouth is pasty or bitter, the tongue foul, and more or less aversion from food is present, with a sensation of weight at the epigastrium, emetics 18 to 24 grains ipecac. or two of tartar emetic, may be given with great advantage. If the cough is dry, painful, and fatiguing, narcotics, as belladonna and opium, should be prescribed.

If in the second period any particular symptom manifests itself, we should insist upon an attention to regimen, and the use of mucilaginous drinks. In the third period, if the symptoms of stomachic or intestinal disorder predominate, vomits, or still better, purgatives will succeed in removing it. During convalescence, it has been found necessary to restore tone to the stomach by the use of bitters and tonics.

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46. *Debate in the Academy of Medicine of France relative to the Influenza.* February 14, 1837.—M. Lepelletier de la Sarthe, having charge of the *Bureau Central*, and supplying the place of one of the physicians of the *Hotel-Dieu* who is sick, has had an opportunity of treating a large number of patients afflicted with the epidemic: the number in twenty days amounted to 1050. Besides its occult cause, the epidemic principle, M. L. recognises also as causes of the influenza, atmospherical variations, and particularly cold combined with moisture. He conceives the disease to depend essentially upon an inflammation of the bronchial mucous membrane, but distinguished by a certain nervous affection—constituting a spasmodic bronchitis. The disease may assume various forms, but it is easy to discover in all cases the same leading concourse of symptoms. Of itself the influenza is always a benign disease; when more serious symptoms develope themselves these are referable to some complication. In two hundred cases of influenza, M. L. observed twenty-five of pneumonia, two of pleurisy, three of gastro-enteritis, two of acute rheumatism, and two of parotiditis. He has seen a phthisical patient suffocated upon the attack of spasmodic bronchitis and die asphyxiated—the same has occurred in many old persons labouring under catarrh. The influenza may assume a very serious character in apoplectic subjects, which is explained as well from the cerebral congestion caused by the cough as from the prescription, as it were, of blood-letting in this disease. The complication the most frequently fatal is pneumonia or pleurisy, more especially as blood-letting, although strongly indicated, in such cases, has not the same advantageous effects as under other circumstances. M. L. has found the use of emetic tartar in large doses with bleeding, to be the most efficacious treatment in such cases. He has also found advantage to result in old persons affected with catarrh from the employment of the white oxyde of antimony. M. L. was struck with the tolerance exhibited for the tartar emetic; of eighteen patients to whom it was given in large doses, two only vomited.

M. Louyer Villermay also regards the influenza as a slight disease. He does not join in the opposition which some physicians evince to the use of blood-let-

ting, from which he has obtained great advantage whenever the pulse was full and developed, and the respiration oppressed, &c. The disease was in that manner cured in three days; the blood presented a firm coagulum, and often a thick buffy coat.

M. Récamier referred to the epidemic of 1803, which was very fatal. The course of the disease was then most frequently by a cutaneous inflammation. M. R. regards the influenza as an affection of the nature of the eruptive fevers. This opinion is not founded merely upon the phenomena of the epidemic of 1803, but upon the concourse of symptoms which are analogous in the two classes of disease. The catarrh common to influenza is in effect the *cattarrhe tupiculeux* of scarlatina; and if in 1837 the cutaneous eruption was not general, very often an erysipelatous redness was observed, and pustules of the lips were invariably present. Finally, it is known that in the eruptive fevers, the eruption does not always occur, but that the *nature* of the disease is not in consequence changed. The eruption, besides, may take place in the interior; this was the case in 1803, when the digestive mucous membrane, as well as the exterior of the body was the seat of the eruption. The internal eruption had all the characteristics of the lesion so well described by Rœderer and Wagler. Whenever an epidemic prevails with any degree of severity, it always leaves after it indelible traces; thus since the epidemic of 1803, M. R. has seen an increase of the intestinal eruptions. M. Récamier distinguishes in the phenomena of influenza the leading forms: in the first, the inflammatory form, the persons affected are generally strong and robust, with a hard resisting pulse, there is acute pain of the head, difficult respiration, and the base of the chest being, as it were, bound with a cord. In this form bleeding is loudly demanded. M. R. has repeated it from four to six times, and he has seen the blood become more and more coagulable in proportion as the bleedings were repeated, a character different from what is observed in pleurisy and pneumonia, and which seems peculiar to influenza. In the second form, the bilious, there is a bitter taste in the mouth, the tongue is white, pasty, and covered with a mucous coating; the pulse has neither form nor resistance; the disease principally affects the digestive organs. Here emetics are indicated and their effects are immediate. M. R. has seen all the symptoms disappear in twenty-four hours under this treatment. Purgatives are much less efficacious, which is easily understood, inasmuch as the emetic, besides the evacuation it produces, causes also diaphoresis, which is the genuine crisis of the disorder. The third form of influenza M. R. terms the nervous. There is here extreme nervous excitement, loss of sleep, transient pains of the limbs and trunk, the pulse is small and depressed; and the prostration of the patient considerable. In such cases bleeding is positively forbidden. M. R. has seen it under such circumstances increase the intensity of pneumonia. Under this form the influenza is a very grave disease; the patients often sink before any means can be employed to excite reaction. What M. R. has found the most successful in such cases is the use of baths.

M. Piorry recognises different phases in the epidemic. He has observed the pulmonary inflammation to extend deeper and deeper, confined at first to the first divisions of the bronchi, it has subsequently reached its final ramifications, which is the grade of the disease now prevailing. M. P. has used, without success, the tart. ant. in large doses in the pneumonia accompanying the influenza, especially in old persons. He has not been more successful in the use of blood-letting even when repeated at short intervals.

M. Bouillaud, without denying a special epidemic cause giving rise to influenza, discovers in the atmospheric constitution a sufficient explanation of its production and propagation. He does not deny but that the epidemical diseases in general stamp upon all intercurrent diseases their own peculiar characteristics; nevertheless, he believes that this proposition has been exaggerated. He has not as yet collected a sufficient number of facts to be able to pronounce with certainty upon the particular character ascribed to the pneumonia accompanying the influenza, but perhaps sufficient to show that repeated bleedings have not the same beneficial effect as in common pneumonia. M. B. cited especially the case of a physician 68 years old, in whom bleeding repeated at short intervals quickly cured a pneumonia of the most serious character. M. B. observed that since the invasion of the epidemic more patients had died under his care than there had during the preceding eight months.

47. *Influenza in France.*—We derive the following remarks on this subject from the *Gazette Médicale de Paris* of February 18th, 1837.—"All our practitioners have remarked, that during the last ten days, the epidemic has deviated from its original character, either in consequence of an increase in its intensity or the occurrence of concomitant diseases. Thus, instead of a slight bronchial catarrh presenting the same concourse of symptoms in all the individuals attacked, we now observe both the original form of the disease, but accompanied by pneumonia of a general character of much greater intensity, and pneumonia of a very severe and invidious grade, accompanied with a tendency to prostration, while in other cases the phenomena of the disease indicate especially disturbance of the digestive organs, or of the nervous system, with a morbid condition more or less alarming, of the whole organism. In place of terminating in a few days with the aid of simple remedies, the disease now requires prompt and active treatment. Bleeding, purgatives, emetics, large doses of tartarized antimony fail often in preventing a fatal termination. The mortality of the disease is, in fact, much more considerable than formerly. M. Bouillaud has lost during the eight last days in his clinical practice, a greater number of patients affected with it than during the preceding eight months.

Are the new pathological forms under which the influenza now presents itself, to be considered as independent diseases, as many members of the Academy believe them to be, or should we attribute the increase in its mortality within the last few days to its being complicated with other more serious affections? This is a very important question, upon the proper solution of which will depend, in a great measure, the plan of treatment it is proper to pursue. We believe with M. Récamier and many other distinguished physicians, that the increased mortality among the sick is caused by the epidemic alone; and this opinion rests upon the following leading considerations:

Almost all physicians have observed that the influenza manifests itself at first by a concourse of general symptoms which affect the respiratory operation only. Secondarily. The occurrence, in the greater number of instances, of the bronchial form of the disease, has led many to suppose that the pneumonic form was a different or complicated disease. This error results from the supposition recently entertained by some pathologists, that diseases differ decidedly from each other according as they are seated in different parts of the same apparatus. M. Récamier very properly considers the reigning disease to be an eruptive fever, the phenomena and anatomical results of which may occupy any portion of the skin, the presence of the disease not being evidenced merely, however, by its exterior manifestations. An epidemic is a general morbific cause of a specific character, which affects an entire population, and which, when once introduced into the organism, gives rise to symptomatic phenomena variable in character, but referable to one and the same cause. It is the same in relation to an epidemic cause of disease as it is in relation to any specific cause of disease, as scrofula and rheumatism, and particularly morbific causes of a more material nature, as the emanations of lead. Should we consider all the pathological manifestations dependent upon these morbific causes as independent diseases, because they present themselves under different forms or attended with different anatomical symptoms?

It has been already remarked that this question has a powerful influence upon the treatment of the epidemic. If the local phenomena it presents be in effect dependent upon one and the same morbific cause, it is important that they should all be submitted to a general plan of treatment, adapted to their nature, and modified only so far as individual indications may demand. Thus we find the influenza attended in different cases with an affection of the throat, of the bronchia, of the lungs, with gastro-enteritis, or with more general symptoms. In all these cases it is the same disease, or in other words, these different cases present various phenomenal or symptomatic indications of the same morbid condition, or of the effects of a similar cause; and the general treatment adapted to remove this cause should be the same in all, with such variations only as are necessary to fulfil secondary indications.

At the last session of the Academy, several distinguished practitioners detailed their experience in relation to the proper treatment of the epidemic. M. Lepelletier, of Mans, believed that he had observed blood-letting in place of being

salutary, to have a tendency to sink the patients into a state of collapse; he gives the preference to large doses of emetic tartar in the more severe cases. To this treatment eighteen out of twenty cases of the pneumonic form of influenza yielded rapidly. He likewise observed that in such cases tolerance of the emetic tartar was readily established. M. Récamier has had recourse to a mixed treatment, sometimes depletive, at others evacuant, and at others narcotic, according as certain indications presented themselves, resulting from the difference of the morbid phenomena in different cases. MM. Louyer Villermay, and Bouillaud appear to have derived advantage from blood-letting. They have not, however, presented results of their practice of so explicit and positive a character as either of the preceding gentlemen. M. Récamier has in fact declared that the cases of pneumonic influenza treated by blood-letting repeated on several successive days, but not repeated several times on the same day, have proved fatal.

When the symptoms of influenza are slight, it is well known that the patient readily recovers with very simple remedies, or even none; but when of a severe, aggravated character, or when the parenchyma of the lungs becomes affected it requires for its removal an active and well directed treatment. The advocates of bleeding have themselves remarked that this remedy does not appear during the prevalence of the epidemic, to produce the same good effects it does under ordinary circumstances. It is difficult to say precisely to what extent bleeding is either injurious or beneficial in influenza, or what are the remedies which should be preferred to it. When the disease is slight it will disappear under almost any treatment; but notwithstanding it may in no case terminate fatally, yet recovery may be more or less rapid and complete according as it is submitted to a treatment more or less judicious. In the commencement of the epidemic the disease was left pretty much to itself, but it being remarked, as it was supposed, that the patients thus treated remained generally in a state of more or less debility, with anorexia of longer or shorter continuance, purgatives were subsequently very generally employed, with the effect of dissipating these remnants of the disease. When administered twenty-four to thirty-six hours after the invasion of the malady, the disease was found to be shortened in its duration, to loose speedily its general symptoms, and to be prevented from changing into a serious affection. Of seventy or eighty patients treated in this manner, all recovered without any dangerous or consecutive symptom. Many of the patients in whom the disease was left to itself at its commencement, were observed to become affected with more serious symptoms, while those who were bled on the first attack did not recover, or very slowly."

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48. *Influenza in Belgium.*—According to M. Gouzée, the epidemic, as it occurred at Antwerp during the last winter, was of a much more serious character than that which prevailed in either 1831 or 1833. He remarks that the disease was not a simple pulmonary catarrh, modified by the epidemic constitution—it was not an inflammation of the bronchial mucous membrane, notwithstanding a cough was most generally one of the predominant symptoms. The cough when it existed, for it was occasionally absent, had in fact peculiar characters, not common to the cough of catarrh. It was small, superficial, if such an expression may be made use of, occurring without any effort, and fatiguing only by its continuance or the extreme irritability of the patient. It not unfrequently occurred in paroxysms, particularly towards the evening or in the morning; being sometimes dry, and at others accompanied by an expectoration of mucus mixed with serum. Exploration of the chest exhibits no impediment to the free expansion of the lungs. If to the above character we add that the cough is almost instantaneously relieved, as M. G. has frequently observed, by the employment of sedatives,—recollecting that under any circumstances, it is to be viewed as a symptom of little importance, and that it is often entirely absent, we have a right to conclude that it does not depend upon an inflammation of the bronchial mucous membrane, the existence of which is evidenced by no other phenomena of the disease.

Certain symptoms, which occur very generally, such as coryza, pain at the upper part of the larynx, and hoarseness, seem to indicate that the cough may depend upon an irritation of the larynx; but the superficial and fugitive alteration with which those symptoms are connected, appears to M. G. to be merely accessa-

ry and not sufficient to explain the other predominant phenomena which give to influenza its peculiar character. These phenomena he believes to result from a disturbance of innervation, upon which, he is of opinion, the disease chiefly depends.

This disturbance of innervation are, he remarks, strikingly evinced by the phenomena of influenza. Pain of the head is constantly experienced in the commencement especially; it is then frequently confounded with a sense of fulness in the nostrils, extending to the eyes and ears; it is attended with vertigo, with a sort of pressure over the eyes, a singular sensibility of the integuments of the head, sleeplessness, and many times slight temporary delirium during the night. The patients are weak, suffer from an oppression of the chest, pains in the back, loins, and extremities; they are quickly exhausted, and liable even to attacks of complete syncope. To the foregoing symptoms, which are purely nervous, are added, in the commencement of the attack, symptoms of a more or less decided reaction. To these M. G. has frequently to present an exacerbation in the morning, and a remission towards evening. The face is red; the skin hot and moist; the pulse moderately frequent, and, as M. G. has always observed, remarkably soft. He has seen some patients who were young and robust, affected with a profuse epistaxis, which produced but little abatement of the disease. The symptoms of reaction disappear by the second or third day, but a sense of debility persists, which bears no relation to the slight degree and short duration of the proceeding symptom. The patients continue to be affected with a lightness of the head, a sense of fatigue, pain, sleeplessness, and return, for a longer or shorter time, of their slight cough, which causes in the thorax a peculiar sensation of fatigue.

The disturbances observed in the digestive organs, the same as those of the organs of respiration, are equally referable to a derangement of innervation. To anorexia and a distaste for animal substances is often joined distressing nausea, vomiting, a sensation of dryness in the mouth, and thirst; nevertheless, the tongue is expanded, moist, and covered only with a slight whitish coating. The pain of the throat, the difficulty of deglutition have their seat in the larynx. M. G. has never found the tonsils swollen. Frequently a slight degree of redness exists at the posterior part of the fauces. The bowels are variable—generally they are costive; but diarrhœa occurred in some cases towards the close of the epidemic.

Many patients complained of an acute pain at the epigastrium and in the hypochondria. We must be cautious not to take these pains for the indications of a gastritis. They are the simple result of the fatigue caused by the cough, which is the more sensibly felt according as the patient is the more weak and irritable; the pain ceases with the cough.

When first attacked with influenza the patients seem to be threatened with a serious disease, nevertheless we need seldom hesitate to promise him a favourable issue. The patient is seized either suddenly, or after having for a few days experienced irregular chills or a more increased susceptibility to cold; but however alarming the symptoms are at the onset, they abate by the second or third day, leaving the patient merely affected with a slight cough, which now often becomes more dry; he remains in a state of feebleness, is easily fatigued, experiences vertigo and a painful sense of pressure over the eyes. But this condition of things has nothing in it to excite inquietude if we except its remarkably long continuance.

In the commencement of the epidemic, the violence of cough and the phenomena of reaction induced M. G. to employ leeches, to the extent of ten or fifteen, applied beneath the clavicles, or of six to eight upon the larynx; but in no case did they cause an amelioration of the symptoms. The only cases in which venesection was resorted to, were those in which there occurred symptoms of bronchitis, pleuritis or pneumonia, and which generally terminated fatally. The treatment was generally confined to the administration of mild and tepid drinks, with confinement to bed in severe cases, pediluvia and diet, to which treatment the phenomena, the most serious in appearance, have promptly ceded. The patients who consented to remain in bed a few days, were much more promptly and certainly cured, than those who merely kept their chamber. M. G. has observed some relapses, these have not been so dangerous as has been asserted; the patients, however, were longer in acquiring their full strength.

The cough which frequently continues during convalescence, becomes a serious symptom in weak and delicate patients. M. G. has seen it, in nervous females, recur in paroxysms of many hours duration, of so violent and painful a character, that the breast appeared to be, as it were, torn, while the patients were sunk into a state of extreme exhaustion. Some large tea-spoonsful of the syrup of lactutcarium, properly prepared, taken as soon as the coughing commenced, have always speedily diminished its violence and caused it gradually to abate. M. G. has also employed in such cases, the powdered belladonna mixed with white sugar, in the dose of a grain, taken about the period when the cough is expected to return, without exceeding, however, two or three grains a day, and in many cases this has removed the cough as it were by enchantment. The water of the cherry laurel, the syrup of the white poppy, and opium he has not found so efficacious. Strengthening aliments, and some degree of exercise, are very proper towards the termination of the disease.

Influenza is not a dangerous disease, excepting when complicated with acute affections of the chest; it may, however, cause diseases of a very prompt and serious nature to become developed in persons predisposed to affection of the chest. It was found to augment in a very decided degree, especially towards the close of the epidemic, the mortality in the Military Hospital and city of Anvers.

Very little disease prevailed during the whole of the year 1836, which was the case also previous to the occurrence of the cholera in 1832. The autumn had been very wet. The first cases of the influenza occurred at Antwerp, about the middle of January, 1837. Females, delicate and nervous persons, in easy circumstances, were the first attacked. The disease soon spread; by the commencement of February nearly the whole population was attacked. By the 15th to the 20th of the month new cases became more and more rare, and about this period there took place a manifest decrease in the disease.

M. G. has seen the influenza in persons of all ages, excepting children under one year. The disease did not exhibit any degree of intensity when it occurred in infants, it was chiefly confined to a slight cough, coryza, running of the eyes, a fever of one day's continuance, and a few days of debility. He has seen it in adults complicated with intense bronchitis, pleurisy, pneumonia, pericarditis, pulmonary emphysema, and irritation of the brain with continued delirium; many of these cases terminated fatally.

A fact worthy of notice was remarked at the Military Hospital; that intermittent fever, previously of tolerable frequency, ceased to present itself during the continuance of the influenza.—*Bulletin Méd. Belge.*, February, 1837.

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49. *Influenza at Copenhagen.*—From an account by Professor Otto, of Copenhagen, of the influenza as it appeared in that city, contained in the *Zeitschrift für die gesammte Medicin*, for June, 1837, we extract the following particulars:

The disease made its appearance in Copenhagen about the middle of December, 1836. The epidemic occurred suddenly, and soon after its appearance, simultaneously in St. Petersburg, Stockholm, Berlin, &c. As in all former similar epidemics it was preceded for a long period by damp and cloudy weather, which also continued during the whole time the disease prevailed: unlike the former epidemics, it commenced in the beginning of winter, while they generally occurred in spring. In December, 1835, which was likewise damp and cloudy, there prevailed an epidemic of measles. The influenza spread throughout the city with uncommon rapidity; one family after another became attacked with it in quick succession, not one of those to whom Dr. O. acted as physician escaped it. By the middle of January, 1837, when the epidemic was at its height, it was estimated that thirty thousand individuals were affected with it, though in all probability the number was even greater, as many did not apply for medical aid but followed their usual occupations. No condition, age or sex escaped its attack. Even those who were labouring under other diseases and were confined to their chamber or even to bed were attacked. The epidemic began to diminish towards the end of January; it continued to prevail, however, during the whole of February, and although cases occurred in the beginning of March they presented less of the peculiar symptoms of influenza, and by the 28th of the month nothing but ordinary catarrh was observed.

The disease was frequently ushered in by febrile symptoms but as frequently

without; almost always, however, by a very peculiar loss of strength. The most striking symptom at first was a violent dry cough, sometimes accompanied and at others unattended with a pain in the breast, and hoarseness. There was likewise a discharge from the nostrils, mostly thirst, loss of appetite and pain of the head. To these symptoms there succeeded, in most cases, all the ordinary phenomena of fever, though in many instances no febrile symptoms were present. There was generally some pain of the stomach, coated tongue, nausea, bitter taste in the mouth, &c. They who paid no attention to the first symptom of the epidemic, but went about and attended to their business as usual, experienced in general an augmentation of the cough, defluxion from the nostrils, pain of the head, &c., with symptoms of fever, and were finally obliged to take to their beds; the disease in such lasted often for fourteen days, or even longer. If, on the contrary, on the appearance of the disease, the patient went to bed and took some gentle diaphoretic medicine, all the symptoms frequently disappeared within three or four days. Notwithstanding, however, in this manner the more severe symptoms were often removed or greatly diminished; in most cases the cough and expectoration continued for a long time, in some instances for four to six weeks; the convalescency from the disease was in general tedious, and attended with want of appetite and especially an inexplicable sense of fulness. An imprudent exposure to cold or dampness during convalescency gave rise to a relapse with symptoms of great severity and danger.

The prognosis was almost always favourable. Of the disease under ordinary circumstances no one died; but in those who either were labouring previously under some disease of the chest, or were predisposed to such, or who while affected with influenza in consequence of exposure to cold were attacked with inflammation of the chest, the symptoms were often of a very severe character, and in some cases terminated in death. Old persons in general were in greater danger from the disease than the young, and especially when weakened by the long continued cough and expectoration to which it so frequently gave rise. In children the disease was milder and less dangerous generally than in adults.

The treatment required by the influenza was the same as that proper in catarrh. When attended by foulness of the prima viæ the muriate of ammonia was peculiarly advantageous. Bleeding was seldom demanded. Leeches were occasionally resorted to to remove pain of the side. For the long continued cough the Iceland moss was given in many cases, and the debility which remained so long after the disease called for the employment of strengthening remedies and nourishing diet.

Dr. Otto remarks, that the influenza, as it occurred in Copenhagen, appeared to him to exhibit a contagious character. D. F. C.

TOXICOLOGY AND MEDICAL JURISPRUDENCE.

50. *On the Poisonous Properties of Hemlock, and its lately discovered alkaloid, Conia.*—Professor Christison has repeated the greater part of the analysis of hemlock lately executed by Professor Geiger of Heidelberg, and had obtained precisely the same results. According to his analysis, hemlock contains a peculiar principle, alkaloidal in its nature, but differing from the previously discovered alkaloids in its form, which is that of an oily-like liquid, volatile at a moderate elevation of temperature, and capable of being readily distilled over with water. It neutralizes acids, without however forming crystallizable salts. It contains a considerable proportion of azote. It quickly undergoes decomposition when exposed to the air, giving out ammonia, and becoming a dark, resinous-like substance.

The discoverer inferred, from a few experiments chiefly made on birds, that this principle, which may be termed *Conia*, from the genus of plant whence it is obtained, possesses active poisonous properties; that it produces coma, convulsions, and depressed action or even paralysis of the heart; and that its poisonous qualities are greatly impaired by combination with acids. The author, however, has been led to conclude, from an extensive set of experiments on the higher orders of animals,—that the effects of Conia on the body are increased rather

than diminished by neutralization with an acid, such as the muriatic; that it does not produce coma when administered either free or combined; that it does not act at all on the heart; that it possesses a local irritant action, and that its remote action consists simply in the production of swiftly increasing paralysis of the muscles, ending fatally by asphyxia from palsy of the muscles of respiration. He farther found it to be a poison of exceeding activity, scarcely inferior indeed in that respect to hydrocyanic acid. Two drops applied to a wound, or introduced into the eye of a dog, rabbit, or cat, will sometimes occasion death in ninety seconds; and the same quantity injected in the form of muriate into the femoral vein of a dog killed it in three seconds at farthest. The author added various reasons for doubting the probability of any chemical antidote being discovered; and suggested artificial respiration as the most probable remedy, founded on an experiment in which the heart was maintained in a state of vigorous action for a long time by artificially inflating the lungs.

An abstract was then given of a set of comparative experiments made with extract of hemlock; from which he inferred that the action of hemlock is identical with that of Conia. Very powerful extracts were used, which had been prepared with absolute alcohol from the leaves or seeds. The effects ascribed by some toxicological authors to hemlock were not observed; but simply paralysis, with intermittent slight convulsions. From this identity of action it may be concluded, that Conia is really the active principle of hemlock, or at least contains it in large quantity, and is not the product of chemical action and new arrangements of elements.

Some remarks were appended as to the probable nature of the State-poison used in ancient times, particularly in Athens, for despatching criminals; which has commonly been held to be a preparation of the same plant with the modern *Conium maculatum*. The author shewed, from the descriptions of the Greek κωνειον and Roman *cicuta*, that this plant could not be the modern *conium;* that the account given by Plato of the effects of the state-poison in the case of Socrates is wholly at variance with the description by Nicander and others of the action of the κωνειον; that the effects ascribed to the poison in Plato's narrative are such as no poison whatever which is known at present can produce; and that consequently either Plato's description is an embellished narrative, or the ancients were familiar with a poison of most remarkable and peculiar properties, with which modern toxicologists are no longer acquainted.—*Transactions of the Royal Society of Edinburgh.*

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51. *Method of separating small quantities of arsenic from substances with which it may have been mixed.* By James Marsh, of the Royal Arsenal, Woolwich.—Notwithstanding the improved methods that have of late been invented of detecting the presence of small quantities of arsenic in the food, in the contents of the stomach, and mixed with various other animal and vegetable matters, a process was still wanting for separating it expeditiously and commodiously, and presenting it in a pure unequivocal form for examination by the appropriate tests. Such a process should be capable of detecting arsenic not only in its usual state of white arsenic or arsenious acid, but likewise that of arsenic acid, and of all the compound salts formed by the union of either of these acids with alkaline substances. It ought, also, to exhibit the arsenic in its reguline or metallic state, free from the ambiguity which is sometimes caused by the use of carbonaceous reducing fluxes. It appeared to me, that these objects might be attained by presenting to the arsenic hydrogen gas in its nascent state: the first action of which would be to deoxygenate the arsenic; and the next, to combine with the arsenic, thus deoxygenated, into the well known gas called arseniuretted hydrogen. Being thus brought to the gaseous state, the arsenic would spontaneously (so to speak) separate itself from the liquor in which it was before dissolved, and might be collected for examination by means of any common gas apparatus; thus avoiding the trouble, difficulty, and ambiguity of clarification and other processes whereby liquors, suspected of containing arsenic, are prepared for the exhibition of the usual tests, or of evaporation and deflagration which are sometimes had recourse to, in order to separate the arsenic from the organic substances with which it may have been mixed.

I had the satisfaction of finding, on trial, that my anticipations were realized;

and that I was thus able, not only to separate very minute quantities of arsenic from gruel, soup, porter, coffee, and other alimentary liquors, but that, by continuing the process a sufficient length of time, I could eliminate the whole of the arsenic in the state of arsenuretted hydrogen, either pure, or at most, only mixed with an excess of hydrogen.

If this gas be set fire to as it issues from the end of a jet of fine bore into the common air, the hydrogen, as the more combustible ingredient, will burn first, and will produce aqueous vapour, while the arsenic will be deposited either in the metallic state, or in that of arsenious acid, according as it is exposed partially or freely to the air. The former condition is brought about by holding a piece of cold window glass opposite to and in contact with the flame, when a thin metallic film will be immediately deposited on its surface; and the latter, by receiving the flame within a glass tube open at both ends, which, in half a minute, will be found to be dimmed by a white pulverulent sublimate of arsenious acid. By directing the flame obliquely within side of the tube, it strikes against the glass and deposites the arsenic partly in the metallic state. In this case, if the tube, while still warm, be held to the nose, that peculiar odour, somewhat resembling garlic, which is one of the characteristic tests of arsenic, will be perceived. Arsenuretted hydrogen itself has precisely the same odour, but considerable caution should be used in smelling to it, as every cubic inch contains about a quarter of a grain of arsenic.

The requisite apparatus is as simple as possible, being a glass tube open at both ends, and about three quarters of an inch in its internal diameter. It is bent into the form of a syphon (*a a*, fig. 1), the shorter leg being about five inches, and the longer about eight inches in length. A stop-cock *b*, ending in a jet of fine bore, passes tightly through a hole made in the axis of a soft and sound cork, which fits air-tight into the opening of the lower bend of the tube, and may be further secured, if requisite, by a little common turpentine lute. To fix the apparatus, when in use, in an upright position, a hole is made in the wooden block *c*, for the reception of the lower part of the pillar *d*, and a groove is cut in the top of the same block to receive the bend of the tube *a a*. Two elastic slips *e e*, cut from the neck of a common bottle of India rubber, keep the tube firm in its place.

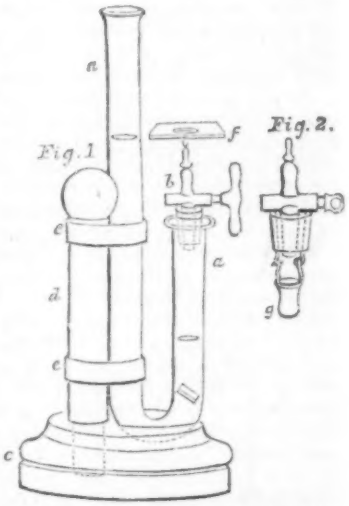


Fig. 1.

Fig. 2.

The matter to be submitted to examination, and supposed to contain arsenic, if not in the fluid state, such as pastry, pudding, or bread, &c., must be boiled with two or three fluid ounces of clean water, for a sufficient length of time.

The mixture so obtained must then be thrown on a filter to separate the more solid parts: thick soup, or the contents of the stomach, may be diluted with water and also filtered; but water-gruel, wine, spirits, or any kind of malt liquor and such like, or tea, coffee, cocoa, &c., can be operated on without any previous process.

When the apparatus is to be used, a bit of glass rod, about an inch long, is to be dropped into the shorter leg, and this is to be followed by a piece of clean sheet zinc, about an inch and a half long and half an inch wide, bent double, so that it will run down the tube till it is stopped by the piece of glass rod first put in. The stop-cock and jet are now to be inserted, and the handle is to be turned so as to leave the cock open. The fluid to be examined, having been previously mixed with from a drachm and a half to three drachms of dilute sulphuric acid (1 acid and 7 water,) is to be poured into the long leg, till it stands in the short one about a quarter of an inch below the bottom of the cork. Bubbles of gas will soon be seen to rise from the zinc, which are pure hydrogen if no arsenic be present; but, if the liquor holds arsenic in any form of solution, the gas will be arsenuretted hydrogen. The first portions are to be allowed to escape, in order

that they may carry with them the small quantity of common air left in the apparatus; after which the cock is to be closed, and the gas will be found to accumulate in the shorter leg, driving the fluid up the longer one, till the liquor has descended in the short leg below the piece of zinc, when all further production of gas will cease. There is thus obtained a portion of gas subject to the pressure of a column of fluid of from seven to eight inches high: when, therefore, the stop-cock is opened, the gas will be propelled with some force through the jet, and, on igniting it as it issues (which must be done quickly by an assistant,) and then holding horizontally a piece of crown or window glass (*f*, fig. 1) over it, in such a manner as to retard slightly the combustion, the arsenic (if any be present) will be found deposited in the metallic state on the glass; the oxygen of the atmosphere being employed in oxydizing the hydrogen only during the process. If no arsenic be present, then the jet of the flame as it issues has a very different appearance; and, although the glass becomes dulled in the first instance by the deposition of the newly formed water, yet such is the heat produced, that in a few seconds it becomes perfectly clear, and frequently flies to pieces.

If the object be to obtain the arsenic in the form of arsenious acid, or white arsenic, then a glass tube, from a quarter to half an inch in diameter (or according to the size of the jet of flame,) and eight or ten inches in length, is to be held vertically over the burning jet of gas, in such a manner that the gas may undergo perfect combustion, and that the arsenic combined with it may become sufficiently oxydized; the tube will thus, with proper care, become lined with arsenious acid in proportion to the quantity originally contained in the mixture.

When the glass tube is held at an angle of about forty-five degrees over the jet of flame, three very good indications of the presence of arsenic may be obtained at one operation; viz. metallic arsenic will be found deposited in the tube at the part nearest where the flame impinges,—white arsenic or arsenious acid at a short distance from it,—and the garlic smell can be readily detected at either end of the tube in which the experiment has been made.

As the gas produced during the operation is consumed, the acid mixture falls into the short limb of the tube, and is thus again brought into contact with the zinc, in consequence of which a fresh supply is soon obtained. This gas, if submitted to either of the processes before described, will give fresh indications of the presence of the arsenic which the mixture may have originally contained; and it may be easily perceived that the process will be repeated as often as may be required, at the will of the operator, till no further proofs can be obtained.

When certain mixed or compound liquors are operated on in this apparatus, a great quantity of froth is thrown up into the tube, which may cause a little embarrassment by choking the jet. I have found this effect to take place most with the contents of the stomach, with wine, porter, tea, coffee, or soup, and, indeed, with all mucilaginous and albuminous mixtures. The means I adopt to prevent this effect from taking place, or, at least, for checking it in a great measure, is to grease or oil the interior of the short limb of the apparatus before introducing the substance to be examined, or to put a few drops of alcohol or sweet oil on its surface previously to introducing the stop-cock and its appendages. I have however found if the tube be ever so full of froth in the first instance, that, in an hour or two, if left to itself, the bubbles burst, and the interior of the tube becomes clear without at all effecting the results.

In cases where only a small quantity of the matter to be examined can be obtained, I have found a great convenience in using the small glass bucket, (*g*, fig. 2.) Under such circumstances the bent glass tube may be filled up to within an inch of the short end with common water, so as to allow room for the glass bucket, which must be attached to the cork, &c. by means of a little platina wire; a bit or two of zinc is to be dropped into the bucket, with a small portion of the matter to be examined, and three or four drops of diluted sulphuric acid; (acid 2, water 14,) and the whole is then to be introduced into the mouth of the short limb of the tube. The production of gas under this arrangement is much slower, and, of course, requires more time to fill the tube, than in the former case, but the mode of operating is precisely the same. Indeed, it is of great advantage, when the quantity of arsenic present is very minute, not to allow the hydrogen to be evolved too quickly, in order to give it time to take up the arsenic.

A slender glass funnel will be found of service when as much as a table-spoonful, or even a tea-spoonful of matter can be obtained for examination. In this

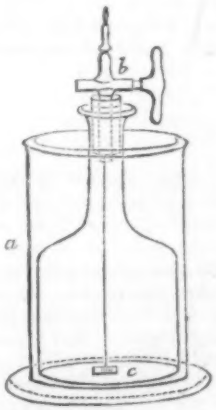
case, the tube is to be partly filled with common water, leaving a sufficient space for the substance to be examined; a piece of zinc is to be suspended from the cork by a thread or wire, so as hang in the axis of the tube; and the fluid to be operated on, having previously been mixed with dilute sulphuric acid, is then to be poured through the funnel carefully, so as to surround the zinc, avoiding, as far as possible, to mix it with the water below, and the stop-cock and its appendages are to be replaced in the mouth of the tube; the production of the gas then goes on as before stated, and the mode of manipulating with it, is exactly the same as described in the foregoing part of this paper.

It will be necessary for me, in this place, to explain the methods I employ after each operation, to determine the integrity of the instrument, so as to satisfy myself that no arsenic remains adhering to the inside of the tube, or to the cork and its appendages, before I employ it for another operation.

After washing the apparatus with clean water, a piece of zinc may be dropped in, and the tube filled to within half an inch of the top of the short limb; two drachms of diluted sulphuric acid are then to be poured in, and the stop-cock and cork secured in its place; hydrogen gas will in this case, as before, be liberated, and fill the tube. If the gas as it issues from the jet be then inflamed, and a piece of window glass held over it as before described, and any arsenic remains, it will be rendered evident by being deposited on the glass; if so this operation must be repeated till the glass remains perfectly clean, after having been exposed to the action of the gas.

When I have had an opportunity of working with so large a quantity of mixture as from two to four pints, (imperial measure) I have employed the instrument (fig. 3,) which is indeed, but a slight modification of one of the instantaneous light apparatuses, now so well known and used for obtaining fire by the aid of a stream of hydrogen gas thrown on spongy platinum. It will, therefore, be of importance only for me to describe the alteration which I make when I employ it for the purpose of detecting arsenic. In the first place, I must observe, that the outer vessel *a*, which I use, holds full four pints, and that the jet of the stop-cock is vertical, and its orifice is twice or three times larger than in the instrument as generally made for sale, and also that there is a thread or wire attached to the cork of the stop-cock *b*, for suspending a piece of zinc *c*, within the bell glass.

Fig. 3.



With an instrument of this description, I have operated on one grain of arsenic in twenty-eight thousand grains of water (or four imperial-pints), and have obtained therefrom, upwards of one hundred distinct metallic arsenical crusts.

Similar results have been obtained with perfect success from three pints of very thick soup, the same quantity of port wine, porter, gruel, tea, coffee, &c. &c.

It must, however, be understood, that the process was allowed to proceed but slowly, and that it required several days before the mixture used ceased to give indication of the presence of arsenic, and also, a much larger portion of zinc and sulphuric acid was employed from time to time, than when working with the small bent tube apparatus, in consequence of the large quantity of matter operated on under this arrangement.

With the small apparatus, I have obtained distinct metallic crusts, when operating on so small a quantity as one drop of Fowler's solution of arsenic, which only contains one-120th part of a grain.

The presence of arsenic in artificial orpiment and realgar, in Scheele's green, and in the sulphuret of antimony, may be readily shown by this process, when not more than half a grain of any of those compounds is employed.

In conclusion, I beg to remark, that although the instruments I have now finished describing, are the form I prefer to all that I have employed, yet it must be perfectly evident to any one, that many very simple arrangements might be con-

trived. Indeed, I may say unequivocally, that there is no town or village in which sulphuric acid and zinc can be obtained, but every house would furnish to the ingenious experimentalist ample means for his purpose; for, a two-ounce phial, with a cork and piece of tobacco-pipe, or a bladder, with the same arrangement fixed to its mouth, might, in cases of extreme necessity, be employed with success, as I have repeatedly done for this purpose.

The only ambiguity that can possibly arise in the mode of operating above described, arises from the circumstance, that some samples of the zinc of commerce themselves contain arsenic; and such, when acted on by dilute sulphuric acid gave out arsenuretted hydrogen. It is, therefore, necessary for the operator to be certain of the purity of the zinc which he employs, and this is easily done by putting a bit of it into the apparatus, with only some dilute sulphuric acid; the gas thus obtained is to be set fire to as it issues from the jet; and if no metallic film is deposited on the bit of flat glass, and no white sublimate within the open tube, the zinc may be regarded as in a fit state for use.—*Transactions of the Society of Arts.*

52. *Mode of Detecting Acetate of Morphia.*—Drantz, Laine and others, recommend for the detection of this salt in the intestines, that the latter should be macerated in distilled water, the liquid filtered, and evaporated to the consistence of syrup. This extract, when treated by alcohol, gives up acetate of morphia, which may be obtained in the state of crystals by evaporation.—*Journal de Chim. Méd.*, January, 1837.

CHEMISTRY AND PHARMACY.

53. *Iodide of Quinine.*—This is formed by precipitating sulphate of quinine by means of hydriodate of potash. It is a yellow precipitate, soluble in alcohol, and crystallizes from this solution in quadrangular prisms. It is a good deal used for the cure of scrofulous tumours, in cases where iodine and tonics are indicated.—*Journal de Chim. Méd.*, for March, 1836.

54. *Adulteration of Calamine of the shops.*—Mr. R. H. Brett has analyzed the powder sold in the London shops under the name of *calamine*, and found the constituents to be sulphate of barytes! oxide of iron, carbonate of lime, lead, (probably sulphate,) with mere traces of zinc.—*British Ann. Med.*, for April 21st, 1837.

MISCELLANEOUS.

55. *Manslaughter by Morison's Pills. Another agent convicted.*—Another of Morison's agents, a man of the name of La Mott, residing at Hull, was tried and convicted lately at the York Spring Assizes, for having administered to a Mrs. Russell a quantity of Morison's pills, and thereby caused her death. This case exhibited as gross quackery as any of its predecessors. Mrs. Russell had been a stout healthy woman, but suffered occasionally from constipation. For two years before her death she was in the habit of taking Morison's pills, for what she called "windy dropsy," and a pain in the kidneys. On the 9th August last she complained of illness, and the prisoner was applied to. From that moment the pills were perseveringly administered, until the patient sunk under her sufferings. The morbid appearances of irritant poisoning were found in the stomach, and particularly at the pyloric orifice. The mucous membrane of the intestines was softened throughout. For the defence witnesses were called as usual, who said they had taken the pills with benefit. The prisoner was found *Guilty*, and sentenced to nine months' imprisonment.—*London Med. Gaz.*, March, 1837.

56. *Necrology.*—Science has lost within a few months, Baron Dubois, of Paris; Professor Charles Himly, of Göttingen; Professor Desgenettes, of Paris; Professor G. R. Treviranus, of Bremen; Professor Turner, of London; and Dr. Hugh Ley, Lecturer on Midwifery at St. Bartholomew's Hospital.

AMERICAN INTELLIGENCE.

Fracture of the internal right Malleolus, without displacement of the Foot. By the EDITOR.—A man 65 years of age, in a fit of delirium, let himself down from a second story window, and alighted on a cellar door, which was fastened with a pad-lock. He received several slight contusions, and a small superficial wound just above the right ankle on the inner side, probably caused by its striking against the pad-lock. The right malleolus was fractured about an inch from its extremity, the fracture passing obliquely downwards. The fragment admitted of slight motion, and its margins could be well determined. What appears somewhat remarkable is, that there was no disposition in the foot to turn inwards; nor did any such disposition subsequently manifest itself, although the patient was exceedingly restless, and repeatedly drew his leg from the fracture box in which it was placed. The leg and foot are at present securely fixed in a "felt splint" moulded to the limb.

Retention of a dead Fœtus in Utero—expulsion at term. By the EDITOR.—In our number for February, 1836, will be found an interesting case, communicated to us by Dr. I. G. Porter, of New London, Connecticut, in which a fœtus of five months, free from putrefaction, was expelled, at the ordinary term of utero-gestation. A case of a similar description has recently occurred to the Editor. He was sent for in haste, and on his arrival was told that the patient, who had twice previously been a mother, had been seized some hours before with severe labour pains, and that "something was coming away from her." On examination, we found in the bed, between the thighs of the patient, a small mass, which proved to be an ovum. The fœtus was enveloped in the membranes, and apparently between the second and third month; the placenta was nearly three inches in diameter and three-quarters of an inch thick, denser and less vascular than usual; the umbilical cord almost a thread, and seven inches in length. The ovum was entirely free from putrefaction. The woman informed us, that nine months since, she ceased to menstruate, and supposed herself pregnant. Her breasts swelled, and she began to increase in size. When at the usual period of quickening, she was attacked with violent flooding; which, however, soon ceased. A few days subsequent to this she experienced symptoms of quickening. Her breasts then became flaccid, and her size began to diminish. Nearly four weeks since, whilst using more than usual exertion, she was again attacked with flooding; which, however, was slight, and soon ceased. Since the period at which she supposed herself to quicken, her health has been unusually good.

The ovum, which we were enabled to obtain through the politeness of Dr. Ruan, her usual professional attendant, but who on this occasion happened to be out of the way, has been deposited in the Wistar Museum.

New form of Certificate of Death required by the Philadelphia Board of Health.—The Philadelphia Board of Health has adopted the following form according to which the certificates of death will be in future returned to the Health Office:

CERTIFICATE.

Philadelphia, 18

residing at No. Street, died

this day of aged years.

Colour | Occupation | Married or single | Native of | Has resided in Phila.

M. D.

The additional information which will thus be gained in relation to the colour, occupation, nativity, precise residence, &c., of the deceased, will furnish important data to the statistical investigator, and enable him to trace out the sources of mortality with much more exactness than he has been enabled to do from the meagre records hitherto made. The designation of the residences of the deceased will show the districts or localities where the influences prejudicial to life mostly abound, and such facts furnished by the statistical examiner may lead to a discovery of the sources of the deleterious agents, and ultimately to their removal. The improvement which the Philadelphia bill of mortality must derive from the judicious modification just adopted, will render it almost as perfect as similar records furnished by the large cities in Europe. G. E.

Borate of Soda in Dysmenorrhœa.—Dr. Daniel Stahl, of Vincennes, Indiana, highly extols, in a communication to the *Western Journal of the Medical and Physical Sciences*, (April, 1837,) the efficacy of Borax in the treatment of Dysmenorrhœa. It is not, however, recommended to be given indiscriminately, or without preparing the system for its reception.

"In lymphatic constitutions and with patients who are debilitated by other diseases," says Dr. S., "the effect is often doubtful, at least not very prompt; whereas in patients of sanguineous or sanguineo-nervous constitutions, and where there is an actual plethora, it will always be found effectual if venesection be premised. We should never give it without bringing all the systems of the organism to a kind of equilibrium; therefore bleed and give antiphlogistics in plethoric constitutions, raise the energy of the nervous system in "nervous subjects," and give tonics to the debilitated.

"After many trials with borax, I determined on the following plan of treatment, and follow it now exclusively.

"In plethoric habits,* I take from four to six ounces of blood from the veins of one of the lower extremities, and repeat the v. s. if necessary, and keep the bowels open by epsom salts. For two days previous to the appearance of the menses, I order a warm foot bath every evening and morning, and give borax in the following formula:

"℞. Natri. borac, ʒii.; infusi semini lini. ℥vii. Misce.; every two hours a tablespoonful to be taken.

"The pain I relieve by extractum hyoscyamit one grain every fifteen or thirty minutes.

"In nervous habits where I find this complaint in four cases out of seven, I commence my treatment with the exhibition of tinctura valerianæ, teaspoonful doses thrice a day, and in days previous to the appearance of the menses, I give borax, etc.; as above.

"As soon as the menstruation ceases for the time, I treat plethoric habits with slight antiphlogistics, and with the nervous, I resume the use of tinctura valerianæ until a day or two previous to menstruation, when I act as before. After the second appearance of the menses, after following that plan, I will generally hear the patient relate with gratification, that the pain was less and of shorter duration, that she menstruated more than usual, and that she feels more contented and cheerful,‡ and by the third time, the complaint, the mere idea of which haunted the poor woman from one period to the other, is generally removed."

Case of Hydrocephalus treated by Tapping.—Professor L. A. Dugas, communicated to the Medical Society of Augusta, at their meeting on the 9th of November, 1836, the following interesting case of chronic hydrocephalus, in which tapping was seven times resorted to, and sixty-three ounces of fluid drawn off. No unpleasant effects followed the operations, though a fatal issue was not prevented.

* It is very rare to find dysmenorrhœa in plethoric habits.

† In some cases the extr. hyoscyami produced nausea, and if there was no contraindication I gave Dover's powder, or what was the most effectual—Aqua Laurocerasi.

‡ In most cases of dysmenorrhœa menstruation is scanty, and symptoms of hysteria are present.

The subject of the case was a male child, born without accident, and who enjoyed apparent good health until one month old.

"His head was then perceived to increase in size more rapidly than is usual in health; and subsequently, the cranial bones separated, the eyes became spasmodically turned downward, and at four months of age the child experienced slight general spasms, which in a few days amounted to convulsions. He appeared in other respects perfectly well, was fleshy and had been subjected to no treatment whatever. The circumference of the head was now twenty-one inches, and the fluctuation could be distinctly felt at the forehead, which was puffed up by the contained fluid. In this condition Dr. D. found the patient, on the 25th of June, labouring under convulsions which had commenced several hours before. Dr. Antony happening to be present, it was at once determined in consultation, to draw off a portion of the effusion; but having no more suitable instrument at hand, Dr. D. made the puncture with a couching needle, penetrating about one inch deep, in the left angle of the fontanelle. On withdrawing the needle, an ounce and a half (℥iss.) of limpid yellowish fluid oozed out, and no more could be obtained. The head was then bandaged; the convulsions continued during the operation, and two or three hours after.

"On the 5th of July, the operation was repeated with the same instrument, and the application of a cupping glass, when ℥ij. more were drawn off.

"*Aug.* 12. Head had very much enlarged, and on the use of a very small trocar, made expressly for the purpose, ℥vij. of fluid were removed.

"*Aug.* 29. Head larger than previous to the last operation. Drew off ℥xi

"*Sept.* 12. Head full, but not distended strongly. Drew off ℥xv.

"*Sept.* 30. Head again filled. Drew off ℥xiiss. *Oct.* 16. Drew off ℥xiv.

"Dr. D. remarked that the convulsions subsided shortly after the first operation, and did not return, except very slightly, a short time before the third and fifth puncture, although the accumulation continually increased. Indeed his general health appeared unimpaired until the 15th of October, when he became dull and stupid. The stupor gradually increased and he became insensible of the nipple when put into his mouth. On the 16th he appeared as if in a profound sleep, and had swallowed nothing for two days.

"After the removal of the ℥xiv. on that day, he again readily noticed and swallowed several teaspoonsful of milk poured into his mouth. He expired quietly on the 18th of October. The operations were never attended with the least change of pulse, nor symptoms of prostration—the only visible effect being the subsidence of the tumefaction, and of the tendency to spasm. Iodine, calomel, bandages, &c. were prescribed, but never attended to, from the unwillingness on the part of the mother to annoy the child, as she thought unnecessarily. The fluid was, after several of the operations, exposed to heat, without coagulating in the least.

Autopsy.—The cranium was opened longitudinally, by an incision made in the membranes connecting the two sides of the frontal and the two parietal bones. The brain was found expanded like a sack, lining the dura mater, and filled with fluid, which did not escape until the brain was punctured. The convolutions were entirely unfolded, and the walls of the *sac* thus formed were about a line or two thick. The corpora striata and thalami were not affected, and the third ventricle was nearly normal; the fornix, velum interpositum and plexus choroides existed; the septum lucidum was not found. The corpus callosum could not be recognised, although the cerebral substance forming the walls of the sac was as firm as usual at this age. Cerebellum normal—as also the medulla oblongata and encephalic nerves. The membranes presented nothing peculiar save a great want of blood in the vessels of the pia mater. The inner surface of the *cerebral sac* resembled very closely a healthy mucous coat of the stomach. It was in some places covered with thick flakes resembling dense mucus; some of these were yellowish, some brown, others of a cream colour and like thick pus. The yellowish patches were at the bottom of that portion of the sac corresponding to the anterior lobes of the brain, and were not very unlike the appearances left after the absorption of apoplectic effusion. The left hemisphere being the first opened, permitted the escape of the fluid contained in both, after which, on looking into the right cavity through the hole of communication with the left, a kind of longitudinal septum, though lacerated, was seen hanging from the upper part of the sac and reaching its floor. It resembled the cineritious substance, but was so pulpy as to be readily

torn and thus to prevent a satisfactory examination. It may possibly have been formed by flakes analogous to those already alluded to. On examining that part of the *sac* which corresponded to the external marks left by the punctures, the cicatrices of the seven perforations were distinctly seen in the cerebral substance, which at this place with its other membranes slightly adhered to the dura mater.

"The contained fluid measured sixty-four ounces, was limpid and of the colour of pale urine."—*Southern Med. & Surg. Journ.*, for Dec. 1836.

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Case of Hydrocephalus treated by Tapping.—The *Southern Medical and Surgical Journal* for February last, contains an account of another case very similar to the preceding, and treated by Dr. J. B. Whitridge, president of the Medical Society of South Carolina, by the same operation.

The subject, was a negro child, whose birth was attended with less than ordinary suffering, and who one week after birth was affected with spasms, which continued for three weeks, when they finally subsided. At this period the head suddenly enlarged. The child became costive, and was generally fretful, but always urinated freely, nursed well, and in other respects enjoyed good health. When three months old, was brought to Dr. Whitridge. Dr. J. Glover* was consulted, who concurring in the propriety of an operation, it was performed by Dr. W. by puncturing the integuments of the cranium through the anterior fontanelle, about three-fourths of an inch to the right of the longitudinal sinus—a common director was then introduced, the groove of which served to conduct the serum from the brain, and in this way upwards of fourteen ounces, by weight, were drawn off.

"The child cried of course, from the pain of the operation, but seemed to be relieved by the evacuation, and before the close of the operation actually went to sleep. A piece of adhesive plaster was placed over the orifice, and the head bandaged so as to approximate the bones which were open at all their sutures, (except the lower portion of the squamous suture,) and to make some pressure upon the brain, perhaps nearly equal to what existed before. The strabismus which had previously been a prominent symptom, was now in some measure relieved. Immediately after the operation the child sucked heartily—but was somewhat fretful during the afternoon—towards evening there was a considerable increase of pulse. With a view to promote absorption from the brain and to determine to the skin and kidneys, I directed a mixture of two parts sp. æther. nitr. and one part tinc. dig. pur., three drops to be taken every two hours and gradually increased to six. This acted very pleasantly, not only upon the skin and kidneys, but as an anodyne, produced tranquil sleep during the latter part of the night.

"*Sept.* 1*st.* Apparently very comfortable all day—had three spontaneous evacuations from the bowels. Medicine continued in doses of six drops.

"*Sept.* 2*nd.* Child *in statu quo*, except that the head had discharged considerably during the night, and the bowels were somewhat constipated. Continued the drops until twelve o'clock, then ordered sub. mur. hydr. gr. vi. In the afternoon removed the bandage and found the head much diminished in size. Soon after, (allowing a little time for an equilibrium to be restored in the circulation,) firmly re-applied the bandage so as to make considerable compression. At six o'clock, directed ol. vol. pini lar. ℥ss., there having been but one alvine discharge during the day, and no other operation from the bowels since the exhibition of the calomel. The turpentine having no effect, ordered oleum ricini ℥ss. to be given in two doses, one half at nine o'clock, the other at half past ten if necessary.

"*Sept.* 5*th.* Child quite comfortable—nursed well—bowels acted on once or twice each day—apparently free from irritation and pain. Diuretic mixture continued in doses of six drops every two or three hours.

"*Sept.* 6*th.* In the morning the child had convulsions—the head gradually enlarging and strabismus increasing. Directed calomel gr. vi. to be given, which operated but three times during the afternoon and night."

The child had again convulsions on the 9th September; the general treatment was continued; but nothing particularly worthy of notice occurred until the 14th September. At this period the

"Child's head had attained precisely the same size it was before the operation,

* Dr. Joseph Glover was the first by whom this operation was performed.

but the strabismus had almost entirely ceased, and the child seemed in other respects much better. At one o'clock repeated the operation near the place it was performed before, and drew off seventeen ounces of serous fluid, considerably more than a pint. Child bore it well. Cried heartily, and evinced very little inclination to syncope. Drops continued.

"*Sept. 15th.* The child had a convulsion in the morning, but has been in other respects quite comfortable during the day. Medicine continued."

The child's health continued as before, she had occasional convulsions and was treated as before. The head gradually enlarged, and by the 5th Oct. had become very turgid. On the next day it ceased to cry.

Oct. 7th. Vomiting came on and was frequent during the day.

Oct. 8th. Dr. W. "again operated upon the head, which was very turgid, and enlarged to nineteen and a quarter inches, measuring over the os occipitis and os frontis, and nineteen and three-fourth inches, measuring under the chin and over the posterior part of the ossa parietalia, near the apex of the lambdoidal suture. The quantity of serous fluid which was now evacuated amounted to fourteen ounces by weight. The puncture was made three-fourths of an inch further back than the former—some small blood-vessel was wounded, in consequence of which the serum was tinged with blood; perhaps a table-spoonful was discharged, the flow of which, however, ceased before the serum was all evacuated. The child which had been so senseless and so constantly inclined to sleep for three days before the operation, did not appear to suffer at all from it. It was evidently more sensible, animated, and brighter afterwards. Although there was not much strabismus previously, it looked better about the eyes after the operation was performed.

"*Oct. 9th.* The night though a tranquil one, was passed without much sleep. To-day the child seems brighter and better—sleeps very little—has had four voluntary stools, or else the effect of the calomel taken yesterday morning. The diuretic mixture resumed this afternoon, which had been suspended during the last thirty hours. No material alteration in the child during the 10th, 11th, and 12th, except that the head seemed to be filling up rapidly. On the thirteenth, the child had several convulsions—was fretful and sometimes cried severely—bowels somewhat constipated—had been acted on but once during the day. Directed the laced cap to be removed and the child's head bathed in cold water—the cap to be reapplied, but not so tight as before. Ordered, sub. mur. hydr. gr. vi., which operated but once next morning. Drops continued.

"*Oct. 20th.* No material alteration in the child, except a gradual enlargement of the head, not only from its rapidly filling up, but apparently from natural growth. The child nurses heartily, is fat, and grows well. The only inconvenience which it seems to suffer, is, occasional slight convulsions, and constipation of the bowels. The head had again become quite turgid, its circumference now being nineteen and a half inches and twenty and a quarter inches, measuring under the chin. At four o'clock Dr. W. repeated the operation, and drew off thirteen and a half ounces of serous fluid—reapplied the laced cap—directed the diuretic mixture to be continued as before, and sub mur. hydr. viij. grs. to be given every fourth day, to be followed with sup. tart. pot. if necessary.

"The child continued *in statu quo*, until Wednesday the 31st of October. Previous to that time, it was comfortable and nursed well. It however had fits occasionally. On Wednesday, as before stated, it became very much worse. Its head had now become quite enlarged, so as no doubt to occasion much compression of the brain. Fever ensued, the convulsions were increased, and in three or four days death ensued.

"*Post-mortem.*—The head was nineteen and three-fourth inches in circumference, measuring over the os frontis and os occipitis above the ears, and twenty and a half measuring over the ossa parietalia and under the chin; just a quarter of an inch larger each way than at the last operation.

"I first plunged in a small trocar and drew off what water would readily flow. I then made an incision through the scalp and through the meninges of the brain, in the direction of the longitudinal sinus, and along the sagittal suture, by means of which, I evacuated the balance of the serous fluid—in all two pounds and a quarter.

"The autopsy in this case, exhibits the following interesting and singular phenomena. The medullary substance of the brain was very small in quantity, being se-

parated into two parts at the ventricles, and attached to the parietes of the cranium—the substance of which was found principally upon two sides, and upon the base of the cranium, arising with a thin edge near the top of the parietal bones, and descending thence to the base, not more than six or eight lines in thickness in any part. The parietal bones were separated about two inches along the course of the sagittal suture, and with the os frontis and os occipitis, formed very large openings at the fontanelles. The dura mater and the other cerebral membranes (viz. the pia mater and tunica arachnoidea,) were very thick and strong, especially at the anterior fontanelle. The falciform process extended to the base of the brain, having a round opening in the centre, of about one inch in diameter, which of course admitted of a free communication of the serous fluid from one side to the other. The tentorium cerebelli had also an opening in it similar to that in the falciform process, which admitted of a free ingress and egress of serous fluid, so that all parts of the cavity of the cranium were subject to dropsical effusion. The cerebellum was somewhat smaller than usual, but in other respects it appeared quite natural and healthy. And upon the functions of this organ no doubt depended the exercise of the powers of life, for so long a time, and the apparent health and flesh of the child. The pressure upon this organ as well as the cerebrum, previous to each operation, no doubt was the principal cause of the convulsions. And had the operation been repeated on the Wednesday or Thursday preceding the child's death, it is probable its life would have been prolonged. But that a sound and healthy action would have been produced, or that a cure could have been effected by a repetition of the operation, is not at all probable. The oftener the operation was repeated, the more rapid would have been the accumulation—the more distressing the symptoms, and consequently the greater the necessity for relief."

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United States Dispensatory.—The Reviewer of the new edition of the Pharmacopoeia of the Royal Medical College of London, in the London Medical Gazette for January last, speaks of the Dispensatory of the United States, by our countrymen, Drs. Wood and Bache, as "decidedly the best work of the kind yet published in any language." We are happy to give currency to this deserved compliment.

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Medical College of Georgia.—At the Annual Commencement, held April 19th, 1837, the degree of M. D. was conferred on fourteen students.

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Cincinnati Medical College.—The number of medical students in this Institution, during the past session, was 85; and at a commencement held on the 3d of March last, the degree of M. D. was conferred on 27. The number of students during the previous (first) session, was 66; and of graduates, 18.

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Surgical Observations on Tumours, with Cases and Operations.—By J. C. Warren, Professor of Anatomy and Surgery in Harvard University, and Surgeon to the Massachusetts General Hospital, with sixteen coloured plates. We have been favoured by the athor with a copy of this splendid and valuable work, too late, however, to enable us to give it that attention which the high reputation of the author would claim for it. We hope to be able to present a review of it in our next.

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College of Physicians and Surgeons, New York.—Dr. A. H. Stevens has resigned the surgical chair in this institution, and Dr. Alban G. Smith has been appointed by the regents to fill the vacancy. At the commencement, in April last, there were twenty graduates.

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Transylvania Medical School.—The chairs in this school have been vacated by the trustees and refilled. Dr. Dudley has been reappointed Professor of Anatomy and Surgery, and Drs. Short and Richardson have also been reappointed to their former chairs; the former to the chair of Materia Medica and Botany, and the latter to that of Obstetrics and Diseases of Women and Children. Dr. J. C. Cross has been appointed to the chair of the Institutes of Medicine and Clinical Practice; Dr. J. Eberle to that of the Theory and Practice of Medicine, and Dr. T. D. Mitchell to that of Chemistry and Pharmacy. Dr. James M. Bush is adjunct Professor of Anatomy.

EXTRA-LIMITES.

REPORT ON THE RADICAL CURE OF HERNIA.

Extract from the Minutes of the Philadelphia Medical Society.

April 29th, 1837.

Dr. R. Coates completed the reading of the Report of the Committee on the Radical Cure of Hernia, when, on motion,

Resolved, That the same be accepted and the Committee be discharged, and that the thanks of the Society be tendered to the Committee for the able and elaborate manner in which they have attended to the duties of their appointment.

Resolved, That a Committee of Two be appointed to request the publication of the Report of the Committee on the Radical Cure of Hernia in the American Journal of the Medical Sciences.

The Committee appointed by the Philadelphia Medical Society, at the session of the 27th of December, 1834, with directions to investigate the character of Stagner's Truss, and other proposed means of radical cure of Hernia, respectfully

Report:

That since the date of their Preliminary Report, (read Dec. 5th and 12th, 1835,) they have devoted much time and thought to the important investigation submitted to their charge; but the numerous moted questions originally involved with it, have been gradually narrowed down in number and compass, in three different ways; firstly, by the decision of several physiological points; secondly, by the results of the analysis of the mechanical construction of instruments; and thirdly, by the introduction of improvements in the formation of trusses, calculated to remove the objections waged against some portion of the apparatus represented as imperfect in the preliminary report.

In offering to the society the conclusions deduced from the observations of the committee, it is deemed unnecessary to enter at length into *all the evidence upon which those conclusions have been founded*, for much of this matter is already before the public in a form sufficiently authentic, and accessible for every useful purpose; and the attempt to include the whole, would swell this report beyond all reasonable or necessary limits. Reference will, therefore, be freely made to the following documents, which have been produced and published in consequence of the investigations of the committee: 1st. The Preliminary Report, published in the American Journal of the Medical Sciences, Vol. XVII. p. 307. 2nd. Note of R. Coates, M. D., on two new Hernial Blocks. Ibid, 543. 3d. Letter from the same gentleman to Heber Chase, M. D., in reply to a note of the latter, on the modus operandi of instruments in Dr. Chase's Treatise on the Radical Cure of Hernia by Instruments. Philadelphia, 1836.

Reference will be also made occasionally to the mechanical reasonings and the detailed cases contained in the work just mentioned.

In the eighth section of the Preliminary Report, (Op. cit. p. 324) the Committee ventured upon a physiological disquisition on the modus operandi of trusses, in producing *the apparently radical cure of Hernia;* and their conclusion on this subject was presented in the following sentence.

"These positions will explain the motive of the Committee in taking the ground, that the most perfectly retentive apparatus is that which offers the strongest probability of radical cure, and that any considerable irritation produced in the parts by the pressure of a block, may be considered, in the present state of the investigation, of secondary importance."—p. 326.

In the letter of the chairman to Dr. HEBER CHASE, to which reference has been already made, the question of the modus operandi has been argued at greater length than would have been proper in a report designed to present a rigid detail of facts and established deductions; but the tenor of that letter, written after much more extended observation than had been offered when the report was read, adds collateral support to the present opinions of the Committee, founded upon the whole of the evidence before them; namely, that the *radical cure of hernia*, by trusses, depends almost exclusively, if not entirely, upon the accuracy and permanency of the retention effected by the instrument. That considerable or long continued irritation in the parts, so far from being an advantage, in reality opposes the successful treatment; that there are no facts in their possession which tend to prove indisputably that even slight irritations of the superficial tissues are transmited to the tendons of the abdominal muscles in such a manner as to accelerate the cure; and that radical cures are sometimes effected without any other irritations than such as are altogether fugitive in character.

It will be remembered by the Society that the Committee, in the Preliminary Report, expressed the decided opinion that "the retentive power of solid blocks exceeds, *cæteris paribus*, by considerable difference, that of pads composed of softer materials."

The whole current of the evidence since presented to them most fully substantiates the correctness of this position, as the number of cases has been large in which the various instruments with soft pads have failed in effecting accurate and permanent retention, and in which the more perfect apparatus with blocks of proper form have been substituted with complete success.

It has been deemed unnecessary to preserve voluminous records of the multitude of cases presented, at different times, before the individuals comprising the Committee, which proved the superior retentive powers of the trusses with solid blocks, but which could not be subjected to frequent examination, on account of the fastidiousness of patients, or the distance of their residences; but sufficient evidence on this head will be found among the detailed observations appended to the former and the present reports. Nor is it esteemed desirable to burden the Society with a laboured analysis of the mechanical defects in the form, material, and mode of attachment presented by the several descriptions of trusses in use prior to the introduction of the contrivance of Mr. Stagner; defects in nearly every instance removed by more recent improvements. This subject has been ably discussed in the fourth chapter of Dr. CHASE's work. The problems involved in it are chiefly of a mechanical character, and all members of the profession

who are at all familiar with the exact sciences are therefore equally competent judges of the correctness of the demonstrations. There has been no evidence presented to lead the Committee into any change of opinion as to the impropriety of substituting firm but elastic materials for the absolute solids in the construction of the armature of trusses. The employment of caoutchouc (of which truss-pads are sometimes constructed) as a direct and permanent application to the skin, has been fully proved to be altogether inadmissible. The proofs of this fact were thrown before the society in a recent lecture, a notice of which will be found in the American Journal of Medical Sciences, XIX. 550; and the Committee will merely add that the irritating effects of this substance are so well known in the neighbourhood of the caoutchouc cloth manufactory, near this city, that it is extensively employed there as a popular remedy in cases of chronic rheumatism.

These remarks have been premised, in order to explain the motives of the Committee in confining their report exclusively to the consideration of the action of trusses with solid blocks in place of pads. Their observation has been extended over a much wider field, but they deem it inexpedient to occupy the time of the Society with an account of the defects of various apparatus which have been so fully analyzed by others that the merits and demerits may be now considered as fairly before the public.

The trusses with solid blocks, now in use or recommended by inventors, may be divided into two classes. 1st. Those which are constructed for the express purpose of producing irritation, in order to effect a condensation of the skin, cellular tissue, and the fascia superficialis or the abdominal tendons about the hernial orifice, into one common mass by adhesion. 2nd. Those which are designed to secure the constant, perfect and safe retention of the bowel, without the attempt to create intentional irritation in the parts pressed by the instrument.

The first class includes the truss of Stagner, and the various apparatus of Dr. Hood for the treatment of common inguinal, ventro-inguinal, femoral and umbilical hernia.

Your Committee are not assured whether the several conoidal truss-blocks of lead, tin, or other metals, of which that attached to the strap and buckler known as Price's Truss (*see* Chase *on Hernia*, p. 59, figs. 9, 10, 11, 12,) may be taken as the type, and the truss which bears the name of Sample's patent, as the least objectionable, were intended or not, by their inventors, to produce adhesions between the skin and parts beneath; but as they undoubtedly act in a manner better calculated to produce irritation than either of the other forms, they are most naturally arranged in this class.

The second class contains the old and well known instrument introduced to the notice of the Society by Dr. Perrine, during the debate which followed the presentation of the Preliminary Report in 1835.

This instrument, known under the name of Eberle's, or the Rachet Truss, was alluded to in the report, when ivory truss-blocks were mentioned; but the specimen presented to the society by Dr. Perrine was armed by a wooden block; and although the committee were not previously assured that wood had been employed in the construction of truss-blocks prior to its employment by Mr. Stagner, they have since ascertained that it has been in use for twenty years, and probably for a much longer period.

This class also embraces all the instruments invented by Dr. Chase, which are five in number, and will be spoken of in detail hereafter.

The remarks of the Committee on the first of these classes, naturally arrange themselves under two heads. 1st. Comments upon the supposed establishment of adhesive inflammation; and 2ndly. An estimate of the retentive power of the apparatus.

First then, on the establishment of adhesive inflammation by trusses of the first class. Your Committee have watched, with great caution and most minutely, the changes produced by the pressure of the truss-blocks in a number of cases; and the result of their observations may be summed up as follows: The application of the instrument soon produces an erythematous blush of the integuments, which, when the pressure is severe, often continues for weeks or months; but, when mild from the first, or rendered so at a later period by the substitution of an instrument with a weaker spring, the redness of the skin changes its character, and appears, on the removal of the instrument, like that simple result of capillary distension which is witnessed immediately on the removal of a tight bandage, wherever it may have been applied; a distension obviously produced by diminished action of the arcuated fibres and coats of the vessels, the tonic contraction of which has been rendered unnecessary for a time by the substitution of a mechanical support, the capillaries being thus incapacitated for resisting completely the vis a tergo of the arterial circulation and the hydrodinamic pressure of the venous column. This cause being more permanent during the use of the truss than during that of almost any ordinary bandage, the consequences are also more durable; and this second kind of redness, or purpleness, is sometimes observable for many days after the removal of the instrument.

The first of these forms of redness is the obvious effect of the superficial irritation produced by the pressure of the block, and may be called, with some propriety, the primary redness; the second is seen even after the parts have become accustomed to the presence of the instrument, and we shall take the liberty of calling it the secondary redness.

The form of hyperemia observed in the primary redness is known to be favourable to adhesion, if the irritation be not sufficiently intense to produce decided inflammation; and even when inflammation does supervene, if the constitution of the patient be good, the inflamed part will be surrounded by cellular adhesions, or depositions usually so called, designed to limit its progress, according to a well known physiological law.

The primary redness, during the use of the trusses of the first class, is often carried to such an excess as to produce decided inflammation, and sometimes even excoriation of the skin. (Case X.) It becomes, then, a question of considerable importance to decide whether the irritation of the block, or that produced by the inflammation which it sometimes causes, ever be transmitted to deeper seated parts so as to bring about adhesion between the cutis-vera, the subcutaneous cellular tissue, and the fascia superficialis. The conclusion on this point will be stated presently.

The form of hyperemia as seen in the secondary redness, marks a condition of the vessels, which, instead of promoting adhesion, is well known to retard the formation of false membranes, while it promotes absorption to such a degree as frequently to determine the solution of such as are already formed, together with the interstitial deposits of tissues and sometimes even the tissues themselves.

If, then, these adhesions and condensations do occur, which are repre-

sented by the hypothesis as the cause of cure by these trusses, the evidence of their existence should be found during the continuance of the primary redness, and cannot be supposed to *commence* at a later period, when the parts have become familiarized to the pressure of the instrument.

Immediately after the application of a truss of the first class, the subcutaneous fat beneath the block begins to disappear by absorption, especially at the part corresponding with the shoulder or most prominent part of the block. After the disappearance of the adeps, the block still continues to sink deeper and deeper, until, in fleshy persons, it appears to be almost embedded; and, on removing the instrument, the integuments present a mould of the block, nearly or quite complete. This condition is observed before the subsidence of the primary redness in some cases, (Case XII.) and in others the parts may possibly become accustomed to the pressure before the depression of the integuments is so strongly marked; but in fact it has been observed in practice that active irritation of the skin is generally reproduced from time to time, being complicated with the secondary debility of the vessels already described; or, in other words, *the skin rarely becomes perfectly accustomed to the pressure of blocks of this class.*

The tenor of the specifications of the patents of Dr. Hood and Mr. Stagner, (the only authorities on the subject known to the Committee,) induces us to believe that the authors of the hypothesis did not intend to carry the supposed condensation of the skin, cellular tissue, and fascia superficialis beyond the point at which the above detailed appearances are observed; but that measures were then designed to be taken in order to lessen or control the amount of irritation produced by the instrument, either by the substitution of a less severe block, or by placing next the skin some layers of silk or other tissue to prevent the direct action of the wood. Your Committee are therefore of opinion that it would not be quite consistent with impartial justice to include the *ulterior effects of the continued pressure of the blocks* in the investigation of the truth or falsity of the hypothesis. These ulterior effects will be mentioned hereafter; but the condition of the parts about the hernial orifice, or the abdominal canal, at the spot where the block presses, at the time when it is most deeply embedded, and during or after the highest irritation, is as follows:

The cutis vera, presenting one or the other form of redness above described, is sometimes thickened a little around the edges of the block, where a general puffiness of the integuments is occasionally observed. In some instances this thickening of the true skin is perceptible for a short distance beneath the more inclined, or inner and upper edge of Hood's inguinal block; but with all the instruments of this class which have been seen in use, the parts where the pressure is considerable, or, in other words, those which are nearest the hernial orifice *when the instrument is rightly applied*, are marked by no thickening of the skin; and, in some instances, that membrane is rendered obviously thinner than when in its normal condition, *even when the case has not advanced beyond the primary stage of irritation.*

The subcutaneous cellular tissue is found in every instance reduced in thickness by the obvious removal of the adeps, and by some process producing still greater compression. The Committee have seen no evidence whatever of the slightest thickening, either in the fascia superficialis, the abdominal tendons, or the edges of the external abdominal ring when that

part has been acted on: and in all the cases the skin, where most closely approximated to the fascia, can be made to glide freely over it, when moved by the finger.

After the final removal of the truss, the parts thus flattened or impressed by the block rapidly regain the general level of the abdomen. The cellular tissue receives anew its characteristic deposits, both within and beneath the cutis vera, and the adeps reappears. A few weeks are sufficient to effect this change; it is sometimes completed before the entire subsidence of the secondary redness, and it has been known to commence even under the pressure of the blocks of Dr. CHASE's trusses.

Your Committee feel compelled to regard these facts as conclusive against the truth of the doctrine, that the trusses or blocks of the first class produce a real condensation of, or adhesion between the skin, the subcutaneous cellular tissue, and the fascia superficialis or abdominal tendons.

If the depression were the result of a true condensation, it would be utterly impossible that the skin should retain, as it invariably does, its mobility upon the parts beneath. If adhesions actually took place, and the hypothesis which considers the cellular tissue as a membrane containing cells be true, the obliteration of those cells would render impossible the rapid reproduction of fat and the disappearance of the depression which has been described. If, on the contrary, that hypothesis be correct which represents the cellular tissue as a homogeneous mass, then the existence of adhesions between the cutis and the parts beneath could not permit the skin to rise again to its natural level until the accidental membranous connexions were gradually elongated by mechanical or other forces; but the parts interested in the present case are not subject to any mechanical distending forces, in proof of which the Committee will refer to the letter of the chairman already quoted; nor can it be supposed that interstitial deposition alone could occasion the necessary stretching of the adhesions within the time required; for this process is always slow and tedious, even under the action of very powerful forces, as is seen in the adhesions following inflammations of serous cavities. If any should believe it possible that the renewed interstitial deposits might elevate the skin to the natural level, the Committee would merely suggest that these depositions could occur only in the intervals of the factitious membranes formed by the adhesions, and hence, that the skin thus elevated, would be inevitably rugose—a character totally inconsistent with the facts of the case. Moreover, we often witness similar depressions of the integuments among the effects of long continued pressure by bandages and splints in surgical cases—as, for instance, over the tibia in ulcers of the inferior extremities—yet, in no case do we see the skin adherent to the parts beneath, unless in places where there has been an actual loss of substance or the establishment of the suppurative process.

Your Committee, therefore, entertain decidedly the opinion that the hypothesis of condensation and adhesion is untenable.

It may now be asked, if adhesion and condensation are not produced by the first class of trusses, what are their actual effects? It is plain that the inflammation produced by the blocks, is greatest around the margin, where the blood-vessels are left free to perform their functions; and, that nature, in that situation, attempts to arrest the progress of the inflammation, or to circumscribe it in the usual way. But the condensation produced by this attempt appears to be confined, like the inflammation itself, entirely to the

skin, and if the consequent irritation be extended to the subcutaneous cellular tissue in any instance, its effects are there confined to a slight increase of the secretions, apparently œdematous, and certainly fluid and temporary. These changes are confined to parts distant from the hernial orifice, and cannot have any influence, direct or indirect, in opposing the exit of the bowel.

Beneath the block, where the pressure has a direct relation to the orifice, the changes are all the result of simple absorption.

If the form of the blocks were well adapted to the anatomical form of the parts, this absorption, if not carried beyond a certain extent, would render the retention of the bowel more secure, by bringing the instrument into closer relation with the actual seat of the accident. The question how far the blocks of trusses of the first class are calculated to secure retention, will be discussed presently; but it is proper, in the first place, to notice the ulterior effects of the instruments when the pressure is continued after the degree of absorption already described has been effected.

In this class of instruments the pressure acts chiefly on the parts immediately beneath the most prominent points and the sub-angular shoulders of the blocks. In these situations the wood is soon brought to bear with great force, and over a narrow or small space, upon the abdominal tendons and fascia.

Your Committee, in their Preliminary Report, expressed their fears that in certain cases, the continuance of this pressure might endanger the integrity of the tendons themselves. They do not feel warranted in quoting hearsay evidence on the justice of this fear, but the Society will observe that in one instance under their observation this result has actually taken place, (see Case XII.) The patient is still under treatment; a long space running perpendicularly upward from a much dilated external ring, following the direction of the shoulder of the inguinal block of Hood and Stagner, as it was applied in that case, is greatly weakened by absorption. The abdominal tendons are there obviously thin toward the part pressed by the heel of the block, and are very obscurely felt toward the middle of the space. The upper outline of the external ring cannot be felt, and its external side seems shaded off gradually, and becomes indistinct at its margin. The bowel is perfectly retained by one of Dr. Chase's large ventro-inguinal trusses, but the ability of the tendons to recover their original structure can only be determined by time.

The doctrine of adhesion and condensation being overthrown, there can remain but one mode of explaining the action of the instruments and their alleged claims as means of radical cure in hernia, viz: Their mechanical influence in producing perfect retention of the bowel; for, whatever changes may occur in the hernial orifice while the instruments are applied, even granting that these changes ultimately render their further application unnecessary, can only be due to the exercise of the natural functions of the part affected, and have no farther dependence on the instruments than such as results from their mechanical action in permanently removing the substances which were previously present from time to time in the false passages which constitute the disease.

We will now, therefore, proceed to examine the retentive power of the trusses of the first class, so far as the subject remained unfinished in the Preliminary Report.

The trusses with conoidal blocks may be safely dismissed with a very few words. If their points be placed accurately over the hernial orifice, whether the intestine makes its exit by the internal or external ring, or at any other point on the surface of the abdomen, these blocks must act as distending forces; and, when the absorption consequent upon their pressure has reached its maximum, they substitute the constant presence of an unyielding solid body lined by the integuments for the occasional presence of a soft and pliable viscus in the false passage—a state of things in which the remedy is literally "worse than the disease!"

Eberle's or the Rachet Truss, with a wooden or ivory block, is an instrument which has never attracted very general attention from the profession. The peculiar mode by which the block is attached to the spring is liable to very grave objections; but as these have been very fully discussed in the work of Dr. CHASE, the Committee deem it unnecessary to dilate upon them here. The block itself is tolerably well calculated for some forms of ventro-inguinal or direct hernia, but falls, in this respect, far behind some of the more recent improvements. For common inguinal hernia its mechanical construction is badly calculated, as it is very difficult to cause its longitudinal diameter to agree at all with that of the abdominal canal; and the enlargement of its lower extremity occasions its pressure to be chiefly exerted on the external ring, where it is least required. It is highly probable that the internal ring was seldom protected at all, in the majority of the cases in which it was employed, and could never have been *very securely guarded* in any instance. Yet, notwithstanding these disadvantages, it is said to have affected some radical cures of hernia, as indeed most trusses do occasionally. Your Committee have never seen it in actual use, but though it is obviously less dangerous to the integrity of the tendons than either of the other trusses of the first class, they cannot recommend any further trials of its value, as more recent contrivances are obviously safer, and more certain in their action.

Neither this truss, nor those with conoidal blocks, are applicable to femoral hernia, nor could the former be employed in umbilical hernia.

In taking up the consideration of the apparatus of Stagner and Hood, it should be premised, first, that Mr. Stagner's specification contains no claim to originality, except in regard to the form of the block, and perhaps the hook, which replaces the button commonly used for fastening the strap of the truss; the instrument being precisely similar in all other respects to the common old inguinal truss: and, secondly, that Dr. Hood's specification contains no claim to *any truss with a spring*, so far as your Committee are capable of comprehending the language of the document, which is not entirely divested of apparent ambiguity. His claims cover certain blocks invented by him, but he does not appear to claim the inguinal block, which the Committee, in their Preliminary Report, regarded as essentially the same with that of Stagner. He claims also a variety of compound and complex drawers, belts, &c. by means of which the blocks were to be applied without the aid of any main truss spring. But it was thought unnecessary at the time of the preliminary report, to go into the investigation of the action of these contrivances; and as they have been exhibited to the Society on a former occasion, the Committee will confine their remarks, at present, to the simple notification of their belief that these belts and drawers, viewed as means of retention in hernia, are vastly inferior to the simplest springs

of the old trusses, whatever may be the form of the pads or blocks employed. This opinion is given on broad mechanical principles, for the Committee have not deemed it necessary to subject it to any practical test.

The adaptation of the blocks of Dr. Hood to the springs of common trusses, is mentioned incidentally in his specification. It is directed that when the circumstances of the case permit, this adaptation should be made; and, as the Committee believe that all cases which admit of the application of the blocks, admit also of the application of the spring, their analysis will be confined to the action of the blocks as connected with springs, similar to those of ordinary trusses.

The umbilical blocks of Hood do not appear to differ essentially from those previously and occasionally employed by surgical practitioners, unless it be in the mode of attachment by means of a spiral spring; and the Committee have nothing to add to the remarks on these instruments made in the Preliminary Report. (Op. cit. p. 312.) They have little additional remark to offer upon the femoral block of the same inventor, except to point out the fact, that as the prominent line of the block must necessarily cross the cord of Poupart's ligament before its elevated point can reach even the spot at which the bowel, in this form of hernia, protrudes in front of the level of the fascia lata, it is impossible that the instrument can be brought into close relation with the hernial orifice beneath Gimbernat's ligament, except by the rupture or absorption of the ligament, or by a degree of compression intolerable to the patient; and that if the necessary relation could be established, the long plane presented by the block, so slightly inclined as it is to the rout of the intestine, could not exert any perfect retentive power without the aid of intolerable compressive force. It is but just to state that the instrument under notice shares this objection in some degree with all its predecessors in the treatment of femoral hernia; for they all press upon Poupart's ligament. None of them address themselves directly to the femoral ring. The objection indeed weighs more heavily against the block of Dr. Hood than against the soft pads of the old trusses; for the latter, by yielding to the pressure of the ligament, and expanding below it, do offer *some* valuable portion of upward pressure by acting on the soft parts beneath its margin; whereas the solid block, being altogether unyielding, exerts scarce a particle of such influence. Your committee deem no further reasoning necessary to account for their disapproval of this instrument.

The inguinal block claimed by Stagner, and adopted, and perhaps somewhat modified, by Dr. Hood, has been made the subject of comment in the Preliminary Report—where its advantages, and the valid objections against it, have been stated. Many cases who had employed this instrument have presented themselves to the Committee, and in a few only of these has the retention of the bowel been constant. They can recall but one instance in which the evidence of the friends, or that of the patient, tended to show that the bowel had never descended during the employment of the truss, after it had been sufficiently adjusted. (Case III.)

That occasional radical cures have been effected by the use of trusses armed with these blocks, is probable, for such results have sometimes followed the use of almost every truss; but, waving the pain and inconvenience produced by the block, which are often very considerable, the Committee have seen sufficient evidence that it furnishes but insecure means of retention, in any form of hernia, and that in the common inguinal

form, for which it is expressly recommended, it cannot be made to press sufficiently on the internal ring, while the lower point of the shoulder acts upon the external ring. From the details of Case XII., to which reference has been already made, the Society will judge how far the linear pressure of the elevated ridge of the block, and the small dimensions of the most prominent part, may endanger the integrity of the tendons and effect the enlargement of the external ring. The objections to the form of this block appear to outweigh any advantages resulting from its solidity.

The ventro-inguinal block of Hood, was condemned with less hesitation in the Preliminary Report—but it is now proper to add the reasons for this condemnation. The block was intended, according to the specification of the inventor, to draw together the parts about the ring of a ventro-inguinal hernia, and to produce adhesion between those parts and the edges of the ring all around the orifice. It is unnecessary to repeat the reasoning which appears to us to prove the fallacy of this theory of adhesion, but the impossibility effecting the adhesion is the lightest objection to the instrument. A stronger one is found in the fact that the concavity of the block necessarily permits the bowels to protrude for a certain distance, so as to occupy the hernial orifice and prevent its contraction, should nature attempt to close it by that process.

The only block of the first class now remaining unnoticed, is the ventro-inguinal block, with a parabolic projection, termed by Dr. Hood "the scrotal block," which was approved, with justice, in Preliminary Report, (Op. cit. 323,) as it secured a more effective retention of certain cases of ventro-inguinal hernia than the armature of any truss then known; but the Committee considered "a more perfect instrument to fulfil the same purposes, both possible and desirable." The defects perceptible in this truss-block, appear to have been, in great degree, the result of the peculiar opinions of the inventor as to the modus operandi of his apparatus—the principal error consisting in the undue elevation of the inferior margin of the block, which was evidently designed to produce the degree of irritation held necessary to effect a cure. Another highly important defect was the strong curvature of the lower margin, which appears as though it were modelled upon the supposition that the external orifice of the abdominal is, as its name implies, *a ring*—and not as nature made it, nearly *a triangle*, with the two columns of the external oblique forming its lateral boundaries and the upper edge of the os pubis its base. The transverse fibres which truncate the superior acute angle of this triangle, do indeed present an arch upward in the normal condition of the parts, and the os pubis is somewhat curved downward between the columns, so that the orifice bears some resemblance to a ring when felt by the finger after reverting the skin of the scrotum; but in ventro-inguinal hernia, these transverse fibres are generally broken or absorbed, and the pubic base being much elongated by the separation of the columns presents but a very slight degree of curvature. The block under review is but ill adapted to the form of this part of the pubis, and hence it does not effect retention with sufficient certainty and constancy to give entire satisfaction.

The observations of the Committee upon these defects have given rise to the contrivance of a most beautiful instrument, the merits of which will be noticed in the sequel.

The specification of Dr. Hood's patent also contains some claims to a

certain mode of succession in the application of *different blocks in the same case, at different stages of the treatment*, and also, to the interposition of some layers of silk between the blocks and the integuments, and the removal of these layers from to time, seriatim;—as these measures relate only to the regulation of the degree of irritation produced by the apparatus, and as we have been compelled to oppose the doctrine which regards this irritation as desirable, we do not think it right to occupy the time of the society with any comments upon the subject of these claims.

From the result of all the evidence presented to them, and their reasonings upon it, the Committee are irresistibly drawn to the following conclusions. 1st. That the trusses of the first class do not secure the complete and permanent retention of the bowel with all the certainty which may be obtained by mechanical means. 2nd. That although it is extremely probable that radical cures may be occasionally effected by the use of such instruments, it has not been proved that the success following their employment exceeds that which has been obtained by the better kinds of trusses previously in use. 3d. That the action of these instruments is often attended with serious and unnecessary inconvenience, uneasiness and pain. Lastly, That their employment for too long a time, when the degree of pressure exerted by them is considerable, sometimes produces absorption of the tendons, dilatation of the hernial orifice, and an extension of the evils they are designed to remove; and that any attempt to obviate this danger, by lessening the pressure while the support of the instruments continues to be required, will diminish the security of the retention. For all which reasons the Committee do not feel warranted in making a favourable report on the claims of this class of trusses upon the confidence of the society.

In entering upon the analysis of the merits of the second class of trusses, the labour becomes more complex in character, and requires that the subject should be divided under more numerous captions.

As the course of the previous argument required that Eberle's or the Rachet Truss should be noticed in the former part of this Report, rather than in its natural order among its fellows of the second class, there remain for examination only the six instruments of Dr. CHASE.

The object of these instruments is to secure the perfect and permanent retention of the viscera in hernia, in order to permit the powers of nature to effect a radical cure after the removal of the misplaced parts which are supposed to offer the greatest obstacle to her success. It is proper, therefore, to investigate in the first instance how far they fulfil the all important purpose of retention; leaving their effects upon the tissues, the modus operandi of nature, in effecting the cure, and the extent of the results to be discussed in the sequel under distinct heads.

The inventions and improvements of Dr. CHASE, many of which have been adopted since the presentation of the Preliminary Report, extend to all parts of the truss and its appendages, and his attention to minute but highly important details has been carried to an extent never equalled by any of his predecessors in this branch of surgery. The complete instruments employed by him are—1st. The Inguinal or Common Inguinal Truss. 2nd. The Ventro-Inguinal Truss. 3d. The Femoral Truss. 4th. The Umbilical Truss. 5th. The Umbilical Belt. 6th. The Double Truss. Each of these demands separate notice, and in most of them the following parts re-

quire distinct examination. (*a*) The Block; (*b*) the Block-attachment; (*c*) the Spring and Strap-attachment; (*d*) the Appendages.

I.—Of Inguinal or Common Inguinal Truss.

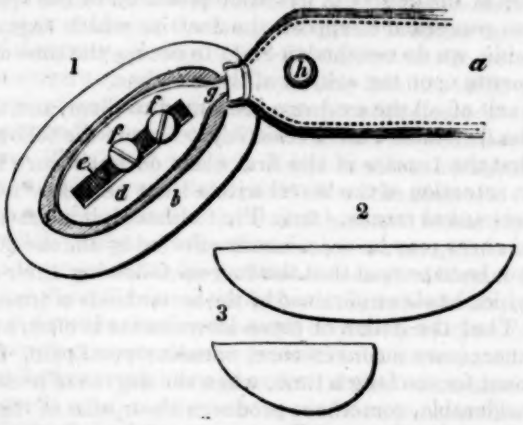

Fig. 1.—*a* The extremity of the main-spring of the truss.—*b* The block.—*c* The brass block-rider: the screws by which it is attached being covered by the block-slide.—*d* The block-slide.—*e* The window in the block-slide.—*f f* The two broad-headed screws of the block-adjustment, securing the rider to the slide, and, when loosened, sliding freely in the window.—*g* The soft iron flexible neck, attaching the block-slide to the main-spring.—*h* The button for the pelvic strap, which is generally used for the perineal strap also.

The proper perineal strap-button on the end of the block-slide is omitted in this and some succeeding figures, to prevent confusion.

Fig. 2.—Longitudinal section of the block.

Fig. 3.—Transverse section of the same.

(*a*) *Of the Block.*—The block of this truss was warmly approved in the Preliminary Report, (Op. cit. p. 323.) and it has amply maintained its character throughout the more recent investigations: it is so perfectly adapted to the form of the parts interested in common inguinal hernia that the Committee are unable to perceive in what manner it could be improved; nor has it ever failed, under their observation, in retaining the bowel both permanently and completely during the time of its employment, after the first few days required for the accurate adjustment of the instrument. Nothing farther appears necessary to prove the decided superiority of this block over all others known to the profession, in the particular form of hernia for which it is designed.

(*b*) *Of the Block-attachment.*—Two very important improvements upon the old modes of attaching the pad to the spring of the truss are observable in the block-attachment of the Inguinal Truss. The block is surmounted by a thin oval plate of brass, termed by the inventor a *block-rider;* and this is adapted to the under surface of an iron plate of nearly similar form, called the block-slide, to which it is attached by means of two round-headed screws, playing freely, when loosened a little, in a longitudinal fenestrum in the block-slide, so as to admit of any required change of the position of the block in this direction, to the extent of about an inch in the trusses designed for adults. The block-slide is connected to the spring by means of a round neck of soft iron, about three quarters of an inch in length, sufficiently stiff to resist any change of shape during the most active movements of

the patient, and sufficiently pliable to act like a universal joint under the hands of the surgeon. The combined action of the slide and the neck enables us to adjust the block with the utmost precision to the edge of Poupart's ligament, the rout of the abdominal canal, and the internal ring, whatever may be the peculiar form of the abdomen of the patient, while the block remains invariably in the exact position chosen by the surgeon; advantages possessed by none of the trusses previously in use, so far as they are known to the Committee. These improvements are, in themselves, sufficient to add very greatly to the value of the instrument.

(c) *Of the Spring and Strap-attachment.*—The endless varieties of form which have been given to the springs of trusses, render it apparently impossible that any thing intrinsically novel, in this part of the hernial apparatus, should be presented to the public hereafter; but it is of the utmost importance that the profession should determine what class of springs are calculated to give the greatest degree of security and permanency to the action of trusses.

This subject has been amply discussed in the work of Dr. CHASE already repeatedly cited; and the Committee are prepared, after due reflection, to coincide in the opinion expressed by that gentleman, that the semi-circular steel springs of Salmon and Ody are objectionable, because they are brought into accurate relation with the body only at the spots corresponding with the spine and the hernial orifice; the whole arch of the spring resting loosely over the side of the pelvis without a fixed location, and remaining liable to continual change of place from the movements of the glutei muscles and the reaction of the dress of the patient. The changes just mentioned must inevitably lead to the danger of corresponding changes in the position of the pads or blocks, and consequent insecurity of retention. The motives for the invention of this class of springs were the three following, and they are obviously fallacious. 1st. It was supposed that the pressure of the spiral elastic springs, being exerted throughout their whole length, renders them liable to derangement by the motions of the parts on which they press; but, excepting on the front of the hypogastric region of the abdomen, those parts have so slight a degree of mobility—based as they are upon the solid structure of the pelvis, and almost uninfluenced by muscular contractions—that their alterations of figure are of no real importance. The changes in the figure of the hypogastric region are fully compensated by the elasticity of the spiral springs, and those of the parts over the ring of the ilium are successfully counteracted by perineal straps, so that the accuracy and permanence of retention are not contravened when spiral springs are employed. 2nd. It was supposed that the changes of shape in the hypogastric region required some mode of adjustment more complete than that effected by the elasticity of the main spring, to enable the pad or block to accommodate itself at all times to the form of the parts; and hence the ball-and-socket pad attachment, to which the semi-circular spring was deemed peculiarly adapted. But, if desirable, this mode of attachment may be as readily employed in connexion with the spiral spring. Your Committee do not deem it desirable; because the ball-and-socket attachment renders secure but one point on the back of the pad or block, while the circumference may be tilted in any direction by the pressure of an intestine from within, almost as readily as by the movements of the abdomen, to which the pad is designed to yield; for the soft and compressible surface of the hypogastric region can-

not securely prevent this tilting when the adjustment of the pad is not remarkably accurate, or when the propulsive force of the intestine in hernia is considerable. A third argument urged in favour of the introduction of semi-circular springs was drawn from the tendency of the strap attached to the spiral spring trusses to draw upwards, and thus displace the pad; but this difficulty is completely removable by giving to the spiral spring and the accessory parts of the truss a proper form and disposition, as will be explained hereafter.

Your Committee are therefore of opinion that Dr. CHASE has done wisely in adopting the spiral spring, and retaining the strap so as to encircle the whole pelvis by the truss, in preference to the semi-circular spring and universal joint of Salmon and Ody's instrument, and the modifications of the same by the late Dr. HULL, of New York, the Rev. Mr. REID, of Georgia, &c. &c.

Although there is nothing positively novel in this part of the Inguinal Truss of CHASE, the inventor has established definite rules for the degree of temper and the extent of the various curvatures of the spring, and also for the position of the strap button, which render it easy to adjust the instrument more securely and permanently in all cases than can be done when these points are left to the discretion of instrument makers. Experience has decided that there is an advantage in giving an elastic temper to all that portion of the spring which intervenes between the pad-attachment in front and the opposite sacro-iliac symphysis in rear, but that the portion extending from the latter point to the opposite side of the pelvis should be so far softened as to admit of adjustment by being permanently bent. Three inches of the hinder extremity are left ductile in all the trusses of the full size; and thus the necessity of making an instrument expressly for each individual case (the great difficulty in the employment of spiral springs entirely of tempered steel) is completely obviated, without sacrificing the accuracy of the adjustment on the one hand, or its permanency on the other.

It has been customary to curve downward the anterior end of the spiral spring, so that when the part which lies across the back is horizontal, the front extremity may approach more nearly toward the abdominal canal. In CHASE's Inguinal Truss this curvature does not exceed three-fourths of an inch, and its commencement is found far back upon the costa ilii when the instrument is applied; so that the spring, in passing forward from that point, winds downward below the anterior superior spinous process without encroaching too much upon the bellies of the glutii muscles or disturbing the proper position of the spring and strap on the back part of the pelvis. Any further increase of this curvature is attended with inconvenience, by giving the direction of the strap too much obliquity, and disposing the instrument to tilt upward in front; and such increase is rendered altogether unnecessary by the soft iron neck of the pad-attachment. In the last three inches of the anterior end of the spring there is another curvature, resulting from a slight tortion of the axis of the generating curve of the spring, which brings the flat side of this part of the spring into more complete correspondence with the surface of the hypogastric region—a matter of much importance to the comfort of the patient, and one giving additional security to the position of the instrument.

It has been customary, almost invariably, with truss makers, to place the

strap-button upon the plate or expansion which supports the pad, but Dr. CHASE has very wisely affixed it to the anterior end of the spring; by which means the obliquity of the strap is much diminished, and the pelvis is enclosed by the instrument in a direction approaching very nearly to the circle, the strap lying altogether above the level of the block-slide, and the disposition of the instrument to tilt or ride upwards being reduced almost to nothing.

The Committee consider the establishment of a fixed model for the triple curvature of the spiral spring, and the position of the strap button, as a highly important recommendation to the instrument under notice.

(*d*) *Of the Appendages.*—The perineal strap is never wanting in the Inguinal Truss of Dr. CHASE. It is attached behind by means of a sliding loop, through which pass the spring and cover. Before, it is commonly secured to the strap button, but each instrument is also provided with another button made expressly for the perineal strap. This is seated on the lower extremity of the block-slide, and may be used to give additional security and force to the action of the block when the lower part of the abdomen is very prominent and loaded with fat. The back-pad is a very important appendage to the truss, giving great certainty to the position of the instrument, by protecting from irritation the spinous processes of the sacrum, and filling the interval between the spring and the integuments along the median line on the back of the pelvis. Some very important improvements have been made in the construction and mode of attachment of this pad. It is formed of a simple circular disk of tin, about four inches in diameter, covered with soft buckskin, and lightly wadded. A broad sliding loop of leather suspends it on the spring and cover, so that its position may be adapted exactly to the size of the patient and other accidental circumstances. This perfectly free mobility of the back-pad is believed to be a novel arrangement and one of high practical importance; for it is found that the parts about the back of the pelvis are so intolerant of even slight pressure, when very long continued, that the subcutaneous fat becomes absorbed and the skin irritated by the mildest back-pad, if it be worn in one invariable position for many months consecutively. This difficulty is entirely obviated by an occasional change of position produced by sliding the pad a little toward one or the other side;—a change that is not attended with any loss in the security of retention, and which is accomplished more readily by the arrangement just described than by any other known to the Committee.

Having thus analysed the several parts of the Inguinal Truss of Dr. CHASE, the Committee feel bound honestly to state their conviction that this instrument surpasses all others known to them in the accuracy and permanence of its retentive power in common Inguinal Hernia; a conviction fully sustained by all their practical observations of the action of trusses. The instrument is worn with so much comfort, that patients generally relinquish it unwillingly, and sometimes *absolutely refuse so to do* even when pronounced well by the surgeon.

The Committee find themselves unable to suggest any improvement or to point out any defect of principle or construction in this truss as now employed by the inventor.

II.—Of the Ventro-Inguinal Truss.

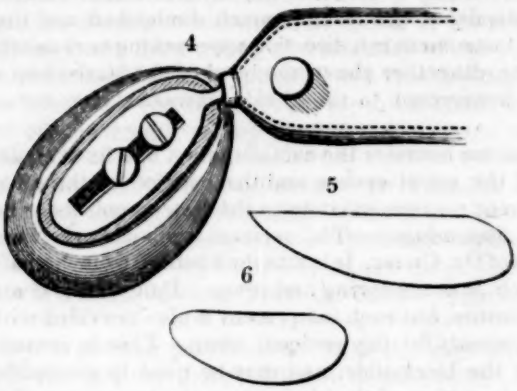

Fig. 4. The attachment being in all respects similar to that in fig. 1, no references are required.
Fig. 5. Longitudinal section of the block.—Fig. 6. Transverse section.

It will be recollected that at the time of the Preliminary Report, Dr. Chase employed in ventro-inguinal hernia, either his own common inguinal block, or a modification of Hood's block with a parabolic projection. The former did not furnish sufficient security against protrusion, and we have already mentioned that the latter, though approved by the Committee as the best solid block then in use for inguinal hernia, is liable to some decided objections, not altogether unattended with danger. The Committee, therefore, stated that they considered "a more perfect instrument to fulfil the same purposes, both possible and desirable." (Prel. Rep. 323.) Their views on this subject having been freely communicated to Dr. Chase, who was already conscious of the necessity of improvement in this instrument, he devoted his mechanical talent to the removal of the difficulty. The result was the construction of the ventro-inguinal block, described by the chairman under the head of American Intelligence, in the same number of the American Journal which contains the report, (p. 543.) At the time that the note was written, the Committee had not enjoyed an opportunity of testing the practical application of this block. They have since witnessed its operation in many cases, some of which were of a very unfavourable character. It is extremely difficult perfectly to retain a ventro-inguinal or direct hernia by any of the forms of soft pads, as it is indispensably necessary that those pads should press extensively upon the brim of the pelvis, in order that they may completely guard an orifice bounded on one side by the pubic bone. This pressure not only increases the number and severity of the cases of varicocele, a disease of frequent occurrence, under the use of all trusses, though seldom of much moment, but it also gives rise occasionally to troublesome hydrocele, and sometimes to wasting of the testicle. The form of Chase's ventro-inguinal block is so accurately adapted to that of the os pubis, that it has secured the bowel perfectly in every instance of ventro-inguinal hernia in which it has been seen applied by the Committee. The primary adjustment of the truss is considerably more difficult, and requires more time and skill in the worst cases

of this accident than in the inguinal variety, but the ultimate success of retention does not appear to be less perfect when once accomplished. The pressure of this block upon the os pubis has been made a subject of complaint in only one instance, and the inconvenience then resulted from a slight mal-adjustment in the first application, which being corrected, the difficulty never recurred.

As regards the accidents consequent to the use of this instrument, the coexistence of varicocele has been observed in several instances, but the Committee think, not more frequently than after the use of the old common Inguinal Trusses. This affection, to the extent noticed, is so common in persons labouring under hernia, and even among those who are not effected with any other disease, that they feel considerable doubt whether in the cases observed, it was generally referable to the action of the truss, to the pressure of the intestines when protruded, or to some pre-existing cause. They have not been able, in more than one instance, to determine, positively, that it was caused by the instrument, and in no case has it produced material inconvenience. One case of slight and temporary hydrocele has been observed by the chairman, and in this the hydrocele attracted but little attention until after the patient had been ordered to relinquish the truss. It occasioned him some alarm at first, for he supposed that a relapse of hernia had taken place; but the symptoms disappeared in a few weeks. (Case V.)

An Agent for Dr. CHASE mentions another similar case, but it appears, from the slender amount of evidence heretofore obtained, that this form of hydrocele is of short duration, and of no material importance. In the very old and extensive ventro-inguinal hernia described in Case I., there was an alteration of texture observable on the side corresponding with the hernia, both in the spermatic cord and the testicle, the latter being almost destroyed by absorption. The Chairman of the Committee, by whom these parts were most cautiously examined, is decidedly of the opinion that this change could not have been induced by the pressure of the wooden truss-blocks employed, defective as some of them were, because it is unreasonable to suppose that such results could have followed an embarrassment in the circulation of the cord, in the short space of time during which the hard blocks were in use, without occasioning pain or inconvenience to the patient. It is fair to conclude, then, that as the condition of the testicle had never been perceived by the patient until pointed out by the Committee, the absorption was the result of the long continued action of the ill supported intestines, together with the occasional pressure of ill applied trusses upon the pubic bone.

The Committee are, therefore, of opinion that there exist no physiological objections to the use of the Ventro-Inguinal Block of Dr. CHASE, which are not equally applicable to all known means of retention in ventro-inguinal hernia: that this block is more accurately adapted to the form of the pelvis, and the parts on which it is intended to act, than any pad or block previously in use, and that it escapes the objections felt to the Ventro-Inguinal Block of Dr. Hood, by the greater regularity of its arched form, and the absence of any angularity or other peculiarity of shape designed for the production of irritation.

The only peculiarity of the Ventro-Inguinal Truss of Dr. CHASE, consists in the form of the block. In every other particular, it is identical with the

Inguinal Truss. But, in the application of the instrument, it is necessary that the perineal strap should be secured, at its anterior extremity, to the button on the end of the block-slide, and not to that on the anterior extremity of the spring.

To the complete instrument, as it has been actually employed during the last year, the Committee may safely apply the same language used in concluding their remarks on the Inguinal Truss.

III.—Of The Femoral Truss.

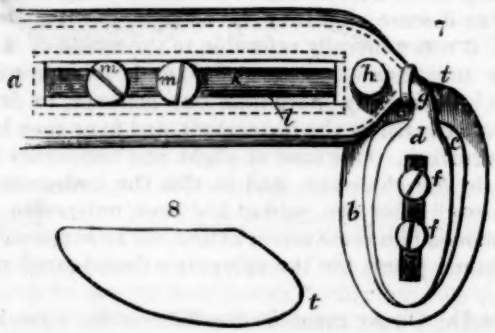

Fig. 7.—The letters from *a* to *h*, inclusive, have the same reference as in fig. 1.—*k* A window in the anterior extremity of the main-spring.—*l* The iron neck of the block-side, continued along the main-spring for some inches and seen through the window *k*.—*m m* Two broad-headed screws of the spring adjustment, securing the flattened extremity of the iron neck to the main-spring, and, when loose, permitting it to slide on the main-spring.
Fig. 8.—A longitudinal section of the femoral block.

The comparative rarity of femoral hernia, and the fact that a large proportion of the cases of this class occur in females, have prevented the committee from receiving testimony upon a sufficient number to form a safe basis for calculation in estimating the value of instruments by practical tests alone; and they feel under the necessity of treating this branch of their subject chiefly as a mechanical question.

Even the anatomy of femoral hernia has not been very well understood until recent times, and this furnishes the only reasonable excuse for the fact that, no truss expressly designed for the treatment of this variety of hernia has ever been strongly pressed upon the attention of the profession. Many trusses have been indeed advertised as applicable to all the forms of hernia;—a degree of pretension carrying with it the proofs of its own fallacy;—and certain works on surgery contain directions for slight modifications in the form of the pads, the curvature of the springs, and the mode of application of Inguinal Trusses, to adapt these instruments to cases of femoral hernia; but your Committee cannot recall any apparatus entitled to the name of a Femoral Truss, (the invention of Dr. Hood being not a truss, but simply a block intended to be added to the spring of one of the common trusses under certain circumstances) prior to the construction of the instrument of Dr. Chase, which is now under examination.

It is proper to recall the attention of the Society to a peculiarity already pointed out as common to all the trusses previously in use, and to the femo-

ral block of Dr. Hood. The pad or block invariably covered not only the site of hernial tumour, but also a portion, and generally a considerable portion, of Poupart's ligament. That the pads or blocks which act in the manner above described cannot effect any great certainty of retention unless the ligaments be made to yield, and the neck of the hernial sac become pressed against the pubic bone with considerable firmness. In the opinion of your Committee, the degree of pressure required to accomplish this purpose would exceed the power of any truss-spring, and the capacity of endurance possessed by the patient, or that of the parts acted upon by the instrument.

All the instruments employed prior to the invention of Mr. Stagner are liable to another objection. They press upon so large a surface, that when employed in femoral hernia they are necessarily liable to displacement in the extensive motions of the thigh.

When the Committee view these remarks, in connexion with the fact that they have met with no detailed and satisfactory records of the radical cure of femoral hernia, by instruments, prior to the year 1835, they are strongly induced to conclude that, no truss employed before the invention of that of Dr. Chase was capable of securing and maintaining that perfect retention of the last portion of the bowel beneath Poupart's ligament, which, by the hypothesis adopted in this Report, is indispensably necessary to the radical cure of this form of hernia.

It will be naturally asked, why, if the retention has always been imperfect or inconstant, have so many patients, labouring under femoral hernia, been secured for years against strangulation?

The reply does not appear difficult. The older trusses, with soft pads, when arranged with great care, were quite capable of closing all that part of the hernial sac which lay below Poupart's ligament; and if, during exertion, or unusual flexion of the thigh, a small portion of intestine was accidentally protruded into the sac, the pressure of the pad must have acted as the best of all modes of taxis, the moment that the exertion ceased or the position of the limb was changed. This action would tend to confine the protrusion almost constantly to the femoral canal, which, being very short and narrow, cannot accommodate a sufficient amount of intestine to produce much danger of strangulation, or to arrest the passage of alvine matter; yet the frequent presence of even minute portions of intestine in the canal, would effectually prevent the contraction of the orifice and destroy the hope of radical cure. The belief that trusses with soft pads do not actually retain femoral hernia, receives additional support from the symptoms of abdominal uneasiness, indigestion, chronic pains, &c. which are usually made a subject of complaint with those who are treated by such instruments both in this kind of hernia and in the inguinal varieties; symptoms which speedily disappear in the latter, when the retention is made accurate and constant by the instruments already described.

It appears, then, that Dr. Chase in attempting the construction of a novel truss peculiarly adapted to the treatment of femoral hernia, ventured upon untrodden ground. We will examine the result.

(*a*) *Of the Femoral Block.*—At the time of the Preliminary Report, Dr. Chase was in the habit of employing, for femoral hernia, a block in all respects similar, except in size, to that designed for common inguinal hernia. This was applied in such a manner as to act entirely below Poupart's ligament; and, when sunk by the absorption of the subcutaneous fat, &c. its

upper extremity tended to oppose directly, and therefore powerfully, the descent of the intestine beyond the margin of the ligament; but it was abandoned soon after the presentation of the report, when the doctrine of cure by irritation was shaken by the course of the investigations; and it was suggested that possibly a block could be invented, which, by becoming embedded in the integuments, might act by means of a suitable prominence beneath the edge of Poupart's ligament, and by pressing the soft parts directly upward, might arrest the bowel at the edge of Gimbernat's ligament, so as to render the retention as accurate as that obtained in inguinal hernia. This suggestion led to the invention of the femoral block mentioned in the note of the Chairman, already quoted. It is very difficult to describe the form of this block, and the Committee will refer to the treatise of the inventor for the best description and an excellent wood-cut representation of it. By considering the mechanical principles of its action, together with the only case fairly before the Committee in which it has been employed, (Case X.) it is deemed safe to recommend it as preferable to any pad or block previously employed in this variety of hernia. It is calculated to preserve its position more accurately than the one before in use; it is not liable to become disturbed by the motions of the thigh; and it gives support in a direction which enables it to act at the greatest mechanical advantage. How far it may answer the special purpose of its construction, by entering under the fold of Poupart's ligament and acting almost directly on the femoral ring, the Committee will not venture to judge upon the evidence of a single case. The report of Dr. CHASE as to its result in other instances, is favourable, but neither that gentleman nor the Committee regard it as having acquired the highest degree of perfection of which it is capable. It will, probably, undergo further modification.

(*b*) *Of the Block-attachment.*—The extreme accuracy desirable in the adjustment of the small femoral block, renders the mode of attachment a matter of great importance. Dr. CHASE has succeeded in reaching, in this respect, a degree of perfection much higher than that attained by any of his predecessors. The relation of the femoral ring to the parietes of the pelvis varies in different individuals to a much greater extent than that of the abdominal canal, and its variations are not so nearly confined to one right line. The soft iron neck of the block-attachment in this truss is bent at a right angle, so as to place the long diameter of the block in a position perpendicular when the patient stands erect. In this position the motions of the block-slide, which are similar to those observed in the preceding trusses, adapt the block to the height of Poupart's ligament with great nicety; but to meet the peculiarities of individuals in regard to the distance between the ring of the ilium and the femoral ring, another arrangement is necessary. There is a fenestrum, two inches in length, in the anterior extremity of the spring; and the soft iron neck, instead of being permanently secured to the spring, is elongated two or three inches, curved, flattened, and attached to the spring by means of two screws, which pass through the fenestrum, and, when loosened, play freely therein, so as to allow the block to approach or recede from the mesial line to any required degree. This double adjustment is simple, secure, and perfectly accurate.

There is no other peculiarity in the spring or appendages of this truss, but the perineal strap is always secured in front to the button on the bottom of the block-slide.

IV.—Of the Double Truss.

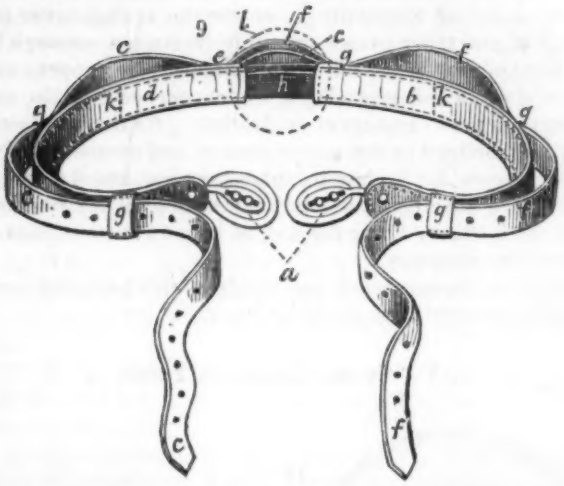

Fig. 9.—*a* Two common inguinal blocks with their attachments.—*b* The spring cover of the left truss terminating in the strap *c c c c*.—*c c c c* The pelvic strap of the left truss, thrown into loops, and passing through an opening beneath the base of the attachment of the strap on the right side at *e*, like the flexor tendons of the last phalanx of the fingers through the terminations of those of the second phalanx.—*d* The spring cover of the right truss terminating in the strap *f f f f*.—*e* The site of the commencement of the pelvic strap of the right truss, secured by the edges to the spring cover, but permitting the left pelvic strap to pass up from under its base so as to become superficial in the rest of its course; this arrangement being concealed by the instrument.—*f f f f* The pelvic strap of the right truss thrown into loops.—*g g g g g* Loops confining each pelvic strap respectively to the spring cover of the opposite truss.—*h* The two springs seen one behind the other, and naked, between the ends of the spring covers.—*k k* Dotted lines representing the spots where the spring of each truss terminates within the spring cover of its fellow.—*l* A dotted line representing the proper position for the back pad.

Great difficulty has always been experienced in treating double hernia when the bowel protrudes on both sides of the lower boundary of the abdomen. The double trusses which have been from time to time constructed, have been formed by encircling the back and sides of the pelvis with a single spring armed with a truss-pad at each extremity; or the two halves of the spring, divided at the spine, were connected by means of a slide or hinge. Notwithstanding the many modes of adjusting the pads in the attempt to effect their accurate adaptation, it was found, practically, that the rigidity of these instruments rendered it impossible to secure the springs properly upon the pelvis or the pads upon the hernial orifice, and none of them have ever obtained the sanction of the profession. The imperfect action of the double trusses, drove the surgeon to the necessity of employing two single trusses in the treatment of double hernia; but here, again, the treatment is surrounded by difficulty; for the interference between the springs behind, and the twisting of the two straps round each other in front, render retention uncertain, and produce great annoyance and disgust to the patient, from the clumsiness of the machinery.

Since the Preliminary Report was read, Dr. Chase has invented the admirable instrument now for the first time presented to the Society. It is an association of two single trusses, so combined as to be perfectly independent in their action, without the slightest mutual interference, yet so asso-

ciated by means of the straps and loose spring-covers, that they present the appearance and act with all the convenience of a single instrument. Each spring, at its posterior extremity, re-enters the spring-cover of its fellow, and the strap of one truss passes smoothly through a passage beneath the commencement of that of the other, so that both sides appear symmetrical, as far as the springs and appendages are concerned, and the straps do not in the slightest degree embarrass each other. As the peculiarities of this instrument are confined to the spring-covers and straps, which are suited alike to the trusses for inguinal, ventro-inguinal, and femoral hernia, the instrument can be adapted, at a moment's notice, to any possible combination of these three forms of the disease, so long as the varieties exist on opposite sides of the abdomen.

The Committee cannot speak too highly of this beautiful invention, but it may be safely permitted to speak for itself.

V.—Of the Umbilical Truss.

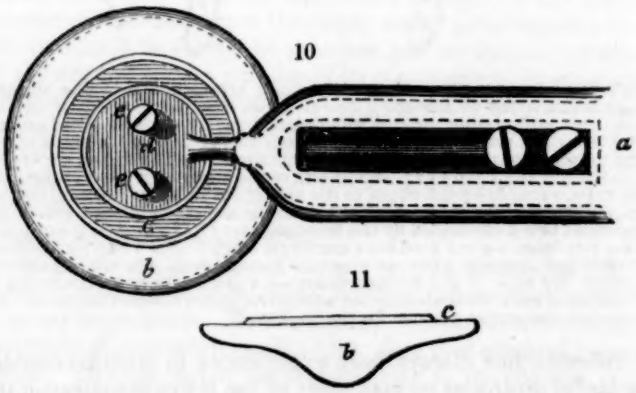

Fig. 10.—*a* The anterior end of the spring, with the same kind of spring attachment as in the femoral truss.—*b* The circular block.—*c* The circular block-rider.—*d* The circular iron disk supporting the block-rider.—*e e* Two button-headed screws attaching the rider to the disk, and serving at the same time to secure the strap.
Fig. 11.—Section of the circular block.

The peculiarity of the block in this instrument consists in its having a central prominence on the convex face, which prominence is a segment of a much smaller sphere than that which furnishes the margin of the block: it is thus made to correspond more nearly to the form of the parts about the umbilicus, while its effuse margin prevents the danger of too great absorption under its pressure.

The block with its brass rider is attached to a circular expansion on the anterior extremity of the soft iron neck, by means of two screws, one placed vertically about an inch above the other, and so formed as to serve at the same time as buttons, on which the strap is secured by means of a double series of eyelet holes. Of course, then, there is no mobility in this attachment. The only adjustment required is in a circular direction, and is accomplished by means of the following arrangement. The spring is placed horizontally. Its anterior extremity is provided with a fenestrum five

inches in length. The soft iron neck is about six inches long, and is secured to the spring by two screws which pass through the fenestrum, and may be made to slide therein precisely as those do which are seen in the corresponding part of the Femoral Truss.

The back-pad is made oblong instead of round, and is supported by two leather loops instead of one, as in the other trusses. It is arched transversely, and is about six inches long by four inches wide. This form is required to give support to the spring on the broad and flattened portion of the back.

This truss has secured the perfect and constant retention of the bowel in all the cases seen by the Committee, two of which were of a peculiarly unfavourable character. In Case XIX. the orifice by which the bowel protruded, extended for two and a half inches in the longitudinal direction, and one and a half in the transverse direction. The patient was enormously loaded with fat, and a block six inches in diameter was required to effect the retention.

In Case XXIV. the peculiar form of the sac and its enlarged tegumentary covering occasioned much embarrassment, as will be seen on reference, but it did not prevent success.

The only accident observed to result from the use of this instrument has been the slight excoriation or mucoid transformation of the skin where it is thrown into folds in consequence of the redundancy occasioned by the sac; an accident observable in bad cases only, one which is easily rendered tolerable by dusting the part with carbonate of zinc or other dry powders, and one, moreover, which is not dependant upon the character of the instrument employed. The Committee deem it, therefore, almost unnecessary to state their decided preference of this instrument.

VI.—Of the Umbilical Belt.

The Committee will not detain the Society with any particular notice of this contrivance; but will merely state, in passing, that it is composed of a broad band of elastic caoutchouc tissue, armed with the block employed in the umbilical truss, and secured by means of a peculiar buckle. It possesses all the excellences of the best hernial belts, with better security against creasing than any of its predecessors. But your Committee deem all belts objectionable in the treatment of umbilical hernia, because it is impossible by such machines to effect the necessary pressure at the umbilicus without embarrassing the motions of the ribs and diaphragm in respiration; for the band acts equally at all points, exerting as much force in the lateral as in the antero-posterior direction. When the functions of the parts subjected to the action are taken into the calculation, it is evident that this arrangement is one exceedingly objectionable in a mechanical point of view. In the trusses, on the contrary, the elastic spring effects the necessary retention by its pressure on the back-pad and the block, which precisely counteract each other, and no more lateral pressure is required of the spring or strap than is requisite to protect the instrument from displacement by the friction of the clothes. In condemning the umbilical belt of Dr. Chase, together with all its predecessors, the Committee feel much pleasure in stating that after practical tests which they did not deem necessary, it has been frankly relinquished by its inventor, although it has *effected radical cures in two cases.* (See Cases XX. and XXIX.)

One point of importance connected with the question of the retentive power of trusses is the constancy with which they are worn. The instruments of Dr. CHASE, regulated as the force of the springs now is, are worn day and night by the patients, and after the first week, very rarely continue to give any inconvenience. In order to enable patients to bathe and swim without danger of protrusion, this gentleman has constructed truss covers of India rubber cloth, *the varnished side turned toward the instrument*, which are designed to be used temporarily at watering places. They have been found to fulfil most perfectly the object of their construction.

As it regards the retentive power of the trusses which have been approved by the Committee, it has been tested in various manners, and severely. Some of the patients, while wearing them, have followed the most trying labours of the harvest field and the marble-yard; others have travelled hundreds of miles on horse-back, over mountainous countries. The subject of the worst incurable case of ventro-inguinal hernia,—which had destroyed his usefulness, notwithstanding his endeavours to retain the bowel by means of other instruments,—has since resumed his labours as a stevador and sailor; some have followed the chase, and leaped fences and dykes, gun in hand, &c., &c.; yet, since the instruments were brought to their present high state of perfection, the Committee know of no instance of protrusion under these exertions. In one case only, the bowel has escaped after the final adjustment, in consequence of carelessness on the part of the friends of the patient, a young infant. (Case XXV.) And in another instance, the insanity of the patient lead to the removal of the truss. (See Prel. Rep. Note II.)

Your Committee deem any further comment on the retentive power of the trusses of the second class altogether unnecessary. These instruments certainly fulfil to admiration the two grand requisites which they consider necessary to bring the chances of radical cure in hernia to a maximum.

The extensive remarks already made on the effects on the tissues, produced by the first class of trusses, render it unnecessary to enter at length on those attending the use of the instruments just described; the institution of a fair comparison will be sufficient.

The irritation occasioned by the blocks of Dr. CHASE is much less severe than that observed when blocks of the first class are employed. That they are capable of producing much irritation, if such a result be desired, is obvious from the history of the case to which reference was made in the last paragraph; in which case inflammation was intentionally brought on, in order to test the powers of the instrument. More or less primary redness has been observed in nearly all the cases, though there have been some in which it could not be distinctly recognised. Except in the case just mentioned it has been always inconsiderable and evanescent, unless the patient had increased it by disobedience to orders. It has never shown that disposition to produce callosity around the margin of the block, which was noticed in some of the cases treated with other instruments. The absorption consequent on the long continued application of the block takes place more slowly, and seldom brings the skin into quite as close approximation to the tendons beneath. In very fat subjects, the block sometimes becomes deeply embedded, but their size and generally rounded form appear to prevent all danger of absorption of the tendons under the pressure. The secondary hyperemia,

resulting from the functional debility of the compressed capillaries, is noticed in every case, but in less degree than when other hard blocks are used, nor does it continue so long after the removal of the instrument. The Committee have never seen inflammation supervening after the subsidence of the primary irritation. It is remarkable that in many cases, the capillaries have partially recovered their tone under the pressure of the blocks, and the secondary hyperemia has been diminished after the trusses have been worn for a considerable time. The redness resulting from this cause is of course noticed in patients who resort to any species of truss, and the Committee, not being willing to trust to their memory of past experience unaided by notes, cannot institute a fair comparison in this respect between the effects of soft pads and the blocks of Dr. CHASE. Their impression is that the effects of the latter are more obvious than those of the former, but that the difference is of no practical importance. Attenuation of the skin has not been remarked in any patient employing Dr. CHASE's trusses in their present state of perfection.

Definitively; the Committee have been unable to trace any distinct connexion between the superficial effects of these instruments, and the changes perceived in the tendinous margins of the hernial orifices noticed during the time of their employment, changes which will next claim our attention.

The absorption of the subcutaneous fat, &c., following the use of these trusses as well as those of the first class, being unaccompanied with any thing like adhesion between the integuments and the tendons beneath, the thin skin of the scrotum is reverted beneath that of the inguinal region with great facility; and in hernia located there, the precise condition of the edges of the hernial orifices may be examined by the finger in the most satisfactory manner, and the following results have been obtained by the inspection of a large number of cases.

The orifices of very large ventro-inguinal hernia are found to contract rapidly after the perfect adjustment of the block, so that a few weeks or months will sometimes suffice to reduce an opening which will receive three fingers, with the skin of the abdomen inverted to less than one half its original area. (See cases I. and XI.) These extreme cases have generally been found in persons advanced in life; and, as the length of time which has elapsed since the very commencement of our investigations is less than three years, many of the cases presented to us are necessarily of recent date, and the question of radical cure remains, in them, still undetermined—if indeed it be reasonable to entertain a thought of such an occurrence under circumstances so extremely unfavourable. But this may be safely said:—The contraction continues upon the increase in all the cases yet incomplete, and no assignable limit short of the natural dimensions of the external ring have been ascertained! The instances referred to, will furnish the Society with a tolerable idea of the importance of the results in the few cases which have been under observation for twelve months or more.

While this contraction is taking place, the tendinous margin of the ring appears to increase very gradually in thickness, and the impression is produced that the substance of the tendon is enlarged by an intestinal deposition. This deposition is decidedly soft at first, but though rendered by degrees more firm and resisting, it does not distinctly assume the well marked characters of the purely fibrous expansion in which it is formed, within any

period yet determined, at least so far as can be ascertained by the sense of touch.

In common inguinal herniæ, even when they have become nearly direct, and in ventro-inguinal hernia of recent date, or moderate extent, the contraction and thickening continue on the increase until the affected ring is often rendered smaller, and, sometimes, much smaller than in the normal condition. (See Cases V. and XXIII.) The progress of the finger in the attempt to penetrate the external ring is then resisted with decidedly more firmness on the affected than on the uninjured side, and this is obviously the case in one instance in which there appears to have been congenital weakness of the parts on both sides. (Case III.)

In common inguinal hernia, the upper orifice at the internal ring is entirely beyond the reach of examination, and it is only by analogy that we can arrive at any inference with respect to its condition. The same remark holds good in relation to the condition of the orifice in femoral hernia.

It is unnecessary to point out the influence which the changes just described must exert in preventing the exit of the intestine. They will be understood by the Society without further comment.

The Committee do not feel called upon officially to express any theoretical opinions as to the mode in which nature accomplishes the contraction of the tendinous orifice in hernia when treated by means of the instruments now under notice, but it is their duty to state that they cannot trace the agency of any irritation produced by the truss-blocks in the history of these changes. The letter of the Chairman on the modus operandi of Dr. CHASE'S apparatus, as published in the treatise of the latter gentleman, contains a full account of the opinions of one of the members on this subject, and the remainder of the Committee are not prepared to combat the positions therein maintained. If the theoretical views alluded to be correct, the singular fact of the contraction of the ring to a size still smaller than the natural one would be accounted for either by supposing that there remained a persistent callosity about the orifice, like that which sometimes continues long around the track of an obliterated fistula, or that the union of ruptured fibres formed an irregular tendinous mass, like the surplus amount of new bone which is produced by the reuniting of a fracture. It is not impossible that both these causes may contribute to produce the appearances described, and it becomes, therefore, a question of much interest to determine how long the undue firmness of the ring may continue; or, in other words, how far the deposition about the margin is provisional, and how far it is permanent. It would be certainly surprising, though by no means impossible, that the cure, when effected, should give the patient better protection than he enjoyed before the accident. This point can only be decided after several years of observation upon the same cases, and it is recommended to the attention of the Society.

The sac, when thin or small, generally escapes observation, and is probably obliterated or returned before the conclusion of the treatment; but when large and thickened, it is found continually contracting and approximating to the orifice by degrees. It is not always wanting when the tests of radical cure are applied without producing protrusion: while it remains, it is generally found more or less distended with fluid. In the letter of the Chairman, already referred to, there will be found a notice of a curious case

of umbilical hernia, in which the sac remained, and presented its connexion with the cavity of the abdomen long after protrusion had been rendered apparently impossible by the contraction of the orifice, under the use of a block of lead, moulded to the form of the part: one case of inguinal hernia occurring in the practice of Dr. CHASE, was attended with somewhat similar circumstances. (Case V.) These may be regarded as remarkable exceptions to general laws, but they are sufficient to establish two important positions; first, that a perfect occlusion of the neck of the sac is not indispensably necessary to the permanent retention of the bowels by natural means; and, secondly, that the changes in the tendinous margin of the orifice are not *invariably* productive of such occlusion. The latter of these positions furnishes a most powerful argument against the doctrine that the changes just mentioned result from the irritation produced by the truss-blocks.

After all that has been stated, the committee feel themselves fully warranted in the following conclusions.

1. The retentive power of solid blocks is, *cæteris paribus*, superior to that of soft pads in the treatment of hernia, as has been already stated in the Preliminary Report.

2. The chances of radical cure depend upon the perfection and permanence of the retention.

3. The perfection and permanence of the retention depend—first, upon the mechanical action of the instruments; and, secondly, upon the power of the parts affected to bear that action without danger of physiological accidents of sufficient importance to interfere with the treatment.

4. All the instruments with solid blocks contrived before the recent inventions of Dr. CHASE, are decidedly liable to important mechanical objections, and all of them, with the exception of the Rachet Truss, are moreover capable of producing physiological accidents of sufficient importance to interfere with the treatment.

5. The construction of the Rachet Truss is such as to render retention uncertain even in ventro-inguinal hernia, to which form of the disease alone, it is tolerably well adapted.

6. The instruments of Dr. CHASE have effected the permanent and accurate retention of the intestines in every case of hernia observed by the Committee, without material inconvenience to the patient, and often under trials more severe than are usually ventured upon by those who wear other trusses; trials which would be imprudent with any other apparatus known to the Committee.

7. If we except the Femoral Truss, these instruments have stood the test of much practical application without superinducing any physiological accidents of sufficient importance to interfere with the treatment.

8. The mechanical principles upon which the femoral truss is constructed appear highly ingenious and promising, and unless this instrument should be found hereafter to be productive of important physiological accidents, it must take precedence of all other modes of treating this variety of the disease. No such accidents are yet known to have been produced by its employment; but the Committee have not enjoyed the opportunity of personal inspection in a sufficient number of cases to determine general results, nor do they deem it proper to receive evidence from any other quarter in discharging the trust reposed in them by the Society.

The Committee are induced by the foregoing conclusions to recommend, in strong terms, the instruments of Dr. CHASE to the confidence of the profession, as the best known means of mechanical retention in hernia, and as furnishing the highest chances of radical cure.

The Committee have not deemed it necessary to institute a *numerical comparison* between the degree of success attending the use of soft pads and hard blocks in the treatment of hernia; for the testimony of the highest surgical authorities, their own experience, and the general feeling of the profession, sufficiently prove the rarity of the cure of hernia by any of the apparatus in use previously to the commencement of the present investigation. They think they have done the most ample justice to the claims of the older trusses by the statements contained in the Preliminary Report, (p. 324.) statements which are less opposed to the claims of common trusses than are the opinions of Professor Hey of Leeds, Tavernier, Abernethy, Sir Astley Cooper, and many other European authorities of the highest class.

Before endeavouring to estimate the chances of radical cure by the use of Dr. CHASE's trusses, it is necessary to determine what is meant by a radical cure.

A variety of facts have been collected by Dr. CHASE which tend to show that vices of formation predisposing to hernia are sometimes hereditary in families, and that congenital weakness of one abdominal ring is not unfrequently accompanied by a similar condition of the other ring, and also of the umbilicus. In cases of the latter description, hernia is occasionally observed consecutively or consentaneously in each of these positions. Facts of this nature have probably given rise to the opinion expressed by some recent inventors of double trusses for the treatment of single herniæ; namely, that the retention of a hernia on one side is like to produce a hernia on the other. The Committee see no foundation for this opinion, unless the strength of the spring of the truss be made much greater than necessary, or in cases of enormous hernia, in which the bowels have been allowed to remain protruded for so long a time that the abdominal muscles have become accustomed to an unusual degree of contraction.

Granting, however, for the sake of argument, that the liability to a consecutive hernia is increased by the retention of one already existing, the use of the double trusses in single hernia would still be objectionable, because the whole amount of pressure to which the abdomen is subjected by them is obviously at least twice as great as is necessary to effect retention, and hence the danger of consecutive umbilical hernia from the action of the instrument is at least doubled. It is obviously a task of extreme difficulty, if indeed it be not impossible, to guard against the occurrence of hernia at all its usual orifices, and the number of consecutive cases will probably be found to form a very small per centage on the whole number placed under treatment. The Committee, therefore, disapprove of the employment of trusses as a prophylactic measure.

Returning from this apparent digression, it does not seem proper to consider the consecutive occurrence of hernia in one situation as a disproof of the radical cure of a previous hernia in another situation.

As all men appear to be subject to this kind of accident under the action of certain forces, it would seem at first sight unreasonable to expect any course of treatment to effect a degree of security against the recurrence of the protrusion in any individual, greater than that which existed prior to

its first occurrence; and hence a cure may be fairly considered radical, without supposing the part affected relieved from the possibility of a reappearance of hernia at the same spot, under all possible circumstances and casualties.

The cases already mentioned in which the external ring has been contracted to a greater degree, and has been rendered firmer than natural during the course of treatment, tend to show that in certain instances the resistance to protrusion is greater after the cure than it was before the accident; and hence, that hernia from future injury would be more likely to occur elsewhere than at its first location. It is not unreasonable to suppose that this increased security may be sometimes permanent, but years of observation are necessary, as has been already stated, to determine how general the applicability of the rule may be.

In answer to the quere, then—What is meant by a radical cure?—the Committee conceive the following reply the fairest and most rational that can be offered.

A cure is radical, when the tendinous and fascial barriers to the egress of the bowel are brought or restored to their normal or original firmness and power of resistance.

The only means by which such a result can be tested, are the firmness and resistance of the orifice when placed where it is subject to examination, and the absence of all appearance of protrusion after the truss has been relinquished for some weeks or months, and after the patient has pursued his usual avocations, resorting frequently to more severe exercises, such as coughing, leaping, fatiguing walks, swimming, lifting, dancing, riding on horseback, &c.

A variety of causes have tended to reduce the number of cases in which the whole history of the accident, the treatment and the result has been placed within reach of the Committee. Among the most important of these may be mentioned, the extreme unwillingness of many patients to relinquish the use of the truss, even when urged to do so by the united advice of their surgeon and the members of the Committee; the removal of many patients to a distance after having been a long while under treatment, but before it has been deemed perfectly safe to lay aside the instrument; and the unwillingness of some persons to submit to the necessary examinations;—yet, notwithstanding these difficulties, the amount of indubitable evidence actually furnished on the question of radical cure has been considerable, though none has been relied upon as a basis for conclusions, except such as has been furnished by the actual examinations of one or other of the members of the Committee, and the testimony of the patients themselves.

All the individuals who have relinquished the use of the trusses approved by the Committee, after having worn them for six months or more, and who have been afterwards examined by a member or members of the Committee, have been subjected to the necessary tests, and are believed to be radically cured in the sense of the foregoing definition. A still larger number who are yet under treatment give promise of a similar result, and those who refuse finally to relinquish the instrument on the advice of their surgeon, present, in the firmness of the rings, and in the absence of protrusion under exertions performed when the trusses are temporarily removed, very strong grounds for believing the cure to be radical in them also.

Two cases only of old ventro-inguinal hernia, occurring in persons of

nearly sixty years of age, and so large that the orifices admitted of the free passage of two or more fingers within the reverted skin, have been deemed incurable; but even in these, the contraction of the rings, and the resistance to protrusion when the trusses have been removed by the patients for a few hours, render the impossibility of cure by no means certain; and it is deemed improper ever to subject the patients to the tests necessary to determine the question. The enormous umbilical hernia which is the subject of note marked Case XIX., is in all probability incurable.

The cases observed include all the usual forms of external hernia, whether resulting from mechanical or physiological causes; and also, some instances of double and triple hernia. The complications which have not been presented are known to be very rare, and the Committee therefore feel no hesitation in expressing a strong and, they think, well grounded hope that a very large majority of the cases of this dreaded disease will yield to the action of the apparatus of Dr. CHASE, when under the direction of persons of high surgical and mechanical abilities.

It has become a subject of regret, since a number of points of unforeseen interest are found to be connected with the subject, that the Committee have preserved detailed notes of only a few of the cases, and have it not in their power to furnish numerical data for determining the frequency of the several forms of hernia, the relative curability, and the time required for the successful treatment at different ages, together with many other highly important subjects of inquiry. This deficiency is in part supplied by the treatise of Dr. CHASE; and it is understood that a statement of the results of the treatment in Ohio, from the pen of a gentleman of high professional reputation, will shortly appear in one of the western journals. Should these examples be followed in other places, the science will be undoubtedly enriched by many curious and important results.

In their Preliminary Report, the Committee expressed decided opposition to the employment of trusses in infants. Candour demands the avowal, that further observations has shaken their opinion on this subject. Several cases treated at a very early age, by the instruments under notice, have proved that they are borne without inconvenience in infancy. Some instances in proof of this will be found noted among the evidence in the Appendix to this Report. The adaptation of the trusses to the comfort of children under three years of age, and their superior certainty of action establish their claim to preference over any other mode of treatment. Their applicability, within the year, has been successfully tested in two cases; and it is certain that more force is required to confine the bowels by any form of bandage or compress, than by means of a well regulated spring and block. The only comparative trial of the soft pad and the hard block in an infant, (Case XXIX.,) has resulted in favour of the latter; but the Committee feel bound to urge the necessity of high surgical skill, and extremely careful attention in dealing with these little subjects.

The time required for the radical cure of an ordinary case of ventro-inguinal or direct hernia in the adult, appears to be from twelve to eighteen months. It is probable that the bowel, in common inguinal hernia, is rendered secure in a shorter time, but prudence has prevented the earlier relinquishment of the truss except in a very few cases. The orifice in umbilical hernia, appears to contract somewhat more slowly, but all the varieties recover much more rapidly in childhood.

The evidence, of which circumstantial details are preserved, will be found in an Appendix to this Report; and a case of high interest occurring in the practice of Dr. Henry Bond, of this city, is added to the list in consequence of its collateral connexion with the question before the Committee, although no remarks will be made upon it on the present occasion. It will probably form the subject of some comments on a future occasion, by the Chairman in his individual capacity.

The Committee will close their labours by recommending to the Society the appointment of a new Committee, to collect evidence on the several questions noticed as undecided in the present Report.

All which is respectfully submitted.

REYNELL COATES.
ISAAC PARRISH.

APPENDIX.

CASE I.—*Ventro-Inguinal Hernia, of* 10 *years standing, from sudden lifting; age of patient* 58 *years; imperfect retention from Chase's Ovoidal Block; contraction of the ring; Chase's Umbilical Block substituted for some days; failure of retention; new Ventro-Inguinal Block employed; perfect retention; bowels retained for hours under exercise without the instrument in twelve months; further tests of radical cure deemed imprudent; truss ordered to be worn permanently; alteration of cord and testicle.*

This case was drawn up to the 5th of December 1835, in the Preliminary Report. (Case I. p. 314.) The plano-convex block, then in use, failed in maintaining the hernia so well as the ovoidal block previously employed for five months. It was, therefore, removed, and the new ventro-inguinal block applied. The ring had contracted very considerably under the previous treatment, if the testimony of the patient himself be deemed conclusive, but it still received two fingers with facility, and the bowel had protruded occasionally, notwithstanding the presence of the instrument, up to the 24th of December, 1835, about which time the new ventro-inguinal block of Dr. CHASE was employed. The retention continued perfect from that time until the Committee lost sight of the patient in August, 1836.

July 11*th*, 1836.—The patient, examined by the chairman, states that he has had no return of colic since the new block was employed. The ring was found a little larger and less resisting than that on the opposite side, the edges somewhat thickened but softer than the original structure. Though ordered to wear his truss at all times, he repeatedly relinquished it during the month of June, and passed from his chamber to the yard, ascending and descending the stairs without it. Once, at night, when he had laid aside the instrument on retiring, he rose, and ran to a fire, at a considerable distance, not discovering the omission until his return. Not the slightest sign of protrusion took place during these exertions. The age and profession of this patient, coupled with the extent of the orifice, was thought a sufficient reason for avoiding any intentional tests of the radical cure of the hernia in this case, and the patient was enjoined to continue the use of the truss during life, notwithstanding the progress of the case had so far transcended any anticipation entertained by the Committee at the time of the Preliminary Report.

The patient was seen by members of the Committee several times after the 11th of July. This truss gave no inconvenience, and he stated that he was generally unconscious of its presence. He had renewed his labours as a ship watchman, and frequently assisted in unloading vessels.

Jan. 12th, 1837. This patient has gone to sea as a sailor, and the Committee have lost sight of him.

There were some circumstances of peculiar interest in this case. On the 11th of July, 1836, the spermatic cord on the affected side was found enlarged to at least three times its natural size. It was soft, and did not feel as if the veins were varicose. The corresponding testicle was much reduced in size and felt like a mass of œdematous cellular tissue enclosed in a firmer, but ill-defined cyst. The sac still continued very thick but had contracted to about one third of its former dimensions. The parts were critically examined by Drs. HORNER and HAYS, and by the Chairman of the Committee. Some doubt existed as to the complete adhesion of the neck of the sac; one of the gentlemen mentioned being convinced of its occlusion; another being of opinion that it remained pervious, and the third declining to decide the question.

Dr. R. COATES was inclined to attribute the enlargement of the cord to an interstial deposit of the consistence of jelly, and the alteration of the testicle to absorption from an embarrassment of circulation for many years, occasioned by the continued pressure of the protruded intestines and ill-adapted trusses.

CASE II.—*Common Inguinal Hernia, from a fall; seven years standing; age of patient* 13 *years. Radical cure in six months, under the use of Chase's Common Inguinal Truss.*

This case is narrated to Dec. 5th, 1835, in the Preliminary Report, (Case II. p. 315.)

April 2nd, 1836. Examined by the Chairman. The external rings on both sides offer the same resistance to the finger, and appear to resemble each other exactly. The patient feels no sensation of weakness or other symptom of the existence of hernia. He has seldom had recourse to his truss since the 5th of Dec. 1835; having only employed it when resorting to unusual exertions. Pronounced cured and ordered to lay aside the instrument entirely. The depression of the integuments beneath the block has entirely disappeared, as has also the redness.

Jan. 11th, 1837. The lad continues perfectly well. Has not worn his truss since the last date. He is radically cured.

CASE III.—*Common Inguinal Hernia; four months standing; age of the patient about* 30 *years; congenital enlargement of the lower part of the abdomen; both external abdominal rings preternaturally large and weak; ring on the affected side rendered smaller and firmer by the treatment. Radical cure in thirteen months.*

This case is drawn up to Oct. 24th, 1835, in the Preliminary Report, (Case III. p. 315.)

Feb. 1837. (*Day of the month not noted.*) The patient omitted the application of the truss, occasionally, from May to July, 1835, and even worked in the harvest field without it. In July he was advised to relinquish it entirely, being pronounced cured. He has not steadily complied with this wish. The external ring on the side affected is now decidedly smaller and more resisting than that on the other side. Its edges are thickened. Ample testing, by vigorous exercise without the truss has been resorted to. The patient was strongly pressed to relinquish the truss entirely, by the

Chairman of the Committee. He is believed to be radically cured, but liable to hernia on the opposite side of the abdomen from slighter causes than usual, owing to the original structure of the abdomen.

CASE IV.—*Common Inguinal Hernia, from Pertussis; accident of seven years standing; age of patient 9 years; treated by Stagner's or Hood's block for some months, then by Chase's Inguinal Truss; retention by the latter perfect after three days. Radical cure.*

March 29th, 1837. This case is detailed to Dec. 5th, in the Preliminary Report, (Case IV. p. 316.) The patient has been repeatedly before members of the Committee, since the last date, but nothing peculiarly worthy of comment has been observed except what is contained in the following note of his father, which communicates the result. He is believed to be radically cured.

Philadelphia, January 14th, 1837.

GENTLEMEN:

I wish to inform you that my son I believe to be quite well of his rupture. He is now gone to —— to a boarding-school, and before he left, I examined him carefully, as I have been in the habit of doing while he was under the care of Dr. CHASE. His bowel has never been down, to the best of my knowledge, since the first application of the instrument. He has never complained of pain in the part. He did not take his truss with him, as I did not think it necessary. I do not know the time that he laid aside the truss, but I think it might be in April last. H—— C——.

Drs. COATES, PARRISH and ASHMEAD.

CASE V.—*Common Inguinal Hernia, of one month's standing, from running violently; age of patient about 35 years. Radical cure in five months.*

This case is detailed up to Dec. 5th, 1835, in the Preliminary Report. (Case V. p. 317.)

Feb. 1837. (*Day of the month not noted.*) This patient states that soon after the last note of the Committee, he was alarmed by the appearance of what he mistook for the return of hernia, but on applying to Dr. CHASE, he was convinced of his mistake. The latter gentleman in his treatise already quoted mentions that sometime after the 5th of Dec. 1835, he consulted him several times under this impression.—(p. 148.) He is decidedly a hypochondriac. At his own instance, the truss was reapplied, though deemed unnecessary. Sometime afterwards, his surgeon represents, that he had an accumulation of serum in the sac; a circumstance which, as Dr. CHASE justly remarks, is not uncommon during the treatment of hernia, even when accurately retained, and which need not occasion alarm. This serum retired into the abdomen on pressure, proving that the neck of the sac was not, at that time, obliterated.

No signs of the sac are now traceable, and no remains of the effusion have been visible for a long time. There appears no reason to believe that the latter had an abdominal origin.

The patient occasionally relinquishes the truss for a time, but labours under nervous timidity with regard to a relapse. The Chairman of the Committee, by whom the last examination was made, strongly urged the

entire abandonment of the instrument, on the plea that the unnatural and unnecessary support might eventually produce weakness by removing the necessity of the functional exercise of the part; but it is not probable that the patient will permanently adhere to the advice, as the truss gives him no inconvenience. He is believed to be radically cured.

The apparent anomaly of the preternatural diminution and firmness of the ring, noticed in the Preliminary Report, which could not be explained at that time, has been proved to fall within the range of a general law, by the subsequent observations of the Committee. It is now still more remarkable than when first noticed.

CASE VI.—*Common Inguinal Hernia, of many years standing; age of the patient supposed to be about 35 years; cause unknown; imperfect retention by the best English Trusses; also by Stagner's or Hood's block; perfect retention by Chase's Inguinal Truss.*

The Committee lost sight of this case soon after the last date in the Preliminary Report. (p. 317.) The tests of the retentive power of the instrument were violent, but the question of radical cure could not be solved, as the gentleman left Philadelphia while under treatment. Dr. CHASE states that when last seen by him, in March, 1836, the patient was not wearing the truss and had not experienced any protrusion.

CASE VII.—*Ventro-Inguinal Hernia, of several years standing; age of patient 33 years; relief, and prospect of cure from Chase's Common Inguinal Truss.*

This patient is the subject of the seventh case of the Preliminary Report. He has disappeared, and the Committee know nothing of his history after January 24th, 1836. His condition then gave promise of cure. The case has not been seen since the invention of the Ventro-Inguinal Truss.

CASE VIII. *of the Preliminary Report; Femoral Hernia.*

This patient is said to have had no return of the protrusion, but she is represented as still using the truss. The Committee have had no opportunity of examining this case at any time, and are not acquainted with its history since November 30th, 1835.

CASE IX. *of the Preliminary Report; Congenital Hernia.*

This case has not been heard from since December 4th, 1835.

CASE X.—*Femoral Hernia, of two years duration; age of patient 30 years; Hood's Femoral Block not permanently tolerated; other trusses producing imperfect retention; apparently perfect retention by Chase's Femoral Truss, with the Ovoidal Block; perfect retention by the new Femoral Truss; radical cure.*

This patient is the subject of a note by Dr. Ashmead in the Preliminary Report, q. v. (Case X., p. 319.)

March 29th, 1837.—The truss has been occasionally worn, in this case, up to the present time, but only for a few hours at a time, during unusual exertions. The new femoral block of CHASE was substituted for the ovoidal block soon after the invention of the former. This occasional use has prevented the return of the subcutaneous depositions, and the patient states

that the block "embeds itself so that the shoulder, or projection, dips underneath a sharp edge of something which I suppose is Poupart's ligament, and, whenever it is applied, rises up under it." This is his own phrase. The depressed skin now plays freely over the parts beneath, so that no adhesion exists between the integuments and the hernial orifice. The Committee have enjoyed no recent opportunity of witnessing the position of the truss. Neither the old nor the new Femoral Trusses have given any material inconvenience.

The patient assures us that the action of Hood's Femoral Block, which had been previously employed, though when in its intended position it apparently retained the hernia, "could not be borne for any length of time, and that, as soon as it was moved, the bowel descended." It produced great inflammation, and a sore over Poupart's ligament, which confined him for two weeks to his bed. The orifice in this case must have been large when the treatment by wooden blocks commenced, as the bowel then slipped down and was returned by the fingers with the utmost facility. The descent always took place on walking across the floor of a room.

Since the time of the Preliminary Report, he has tested the cure by pursuing his usual avocations, swimming and other severe exercises, for weeks together, without any application of the truss. His occasional use of the instrument is made entirely at his own suggestion. He is considered radically cured; but, whether the result has been obtained solely by the old, or partly by the new Femoral Truss of Dr. Chase, the Committee will not attempt to determine. Reference to the Preliminary Report will show that the cure was far advanced while the ovoidal block was in use.

The Committee place much confidence in the representations of the patient himself in this case, as he is a gentleman of education and intelligence.

Case XI.—*Large Ventro-Inguinal Hernia, of many years standing; producing ill health and disability; age of patient 60 years; complete relief and perfect retention by Chase's Ventro-Inguinal Truss.*

This is the case marked Note I., in the Preliminary Report. The estimable and companionable old gentleman who is the subject of it, has been seen several times by the Committee during the year 1836. He has been restored from a condition which rendered life almost a burden, to one of high comfort and enjoyment. The Preliminary Report displays the effect of the ovoidal block in securing *the permanent*, but probably *not the accurate*, retention of the bowel, for he could only venture upon very moderate exercise with safety, and continued liable to much abdominal uneasiness at times, until the ventro-inguinal block was brought to perfection, and substituted for the previously applied and worse adapted one. Since that time he has been restored to perfect health, walks long distances without suffering, has passed a season in his favourite amusement of trout fishing among the mountains, and wears his truss with scarce a perception of its presence. During occasional relinquishment of the instrument, which has now and then continued for some hours, no signs of protrusion have occurred. No accurate examination of the ring has been made for a long time. It is deemed altogether improper to test, in this case, the natural powers of retention, and the instrument will be worn during life.

CASE XII.—*Common Inguinal Hernia; Stagner's or Hood's Block employed; deep linear depression of the integuments; absorption of a portion of the tendon of the external oblique muscle; perfect retention by Chase's Ventro-inguinal Truss; improved condition of tendon; case still pending.*

The commencement of the history of this case will be found in Note IV. of the Preliminary Report, (p. 321,) and was written in December, 1835.

March 5th, 1837. The patient was examined by the Chairman of the Committee this day. Dr. CHASE states that the patient continued to wear the truss with Stagner's or Hood's Inguinal Block, for three or four weeks after the examination in October, 1835, in consequence of neglecting to call on his surgeon agreeably to appointment. This unfortunately led to a more rapid alteration of the part of the tendon pressed upon than was calculated on, either by the Committee or his surgeon. The new Ventro-inguinal Truss was applied as soon as completed. The present condition of the parts about the orifice is as follows.

The integuments are still considerably depressed in consequence of the subcutaneous absorption, but the block applies itself equally over a wide space, without bearing too forcibly on the tendons. The retention has been perfect from the first. The skin is not rendered preternaturally thin. It is slightly red from the debility of the capillaries produced by pressure, but there are no signs of irritation about the part. The skin slides over the parts beneath with the greatest facility, proving the absence of adhesions.

The usual resistance to the finger offered by the abdominal parietes is wanting over a space of about two fingers breadth, running perpendicularly upward from the edge of the os pubis at the site of the external abdominal ring. The existence of the tendon of the external oblique muscle is obscure thoughout this space, and is not perceptible at all toward the lower part of the space. On reverting the skin of the scrotum before the finger, into the external ring, the internal column is found well defined; the external column is indistinct. The tendon can be felt in a healthy condition far to the right, but appears gradually reduced to mere cellular membrane as it approximates to the ring, the upper margin of which cannot be determined by the sense of touch. The spermatic cord is felt throughout nearly the whole length of the abdominal canal, with such extreme distinctness that it might be supposed to be covered only by a thin layer of free cellular membrane. Dr. CHASE thinks that the absorption of the tendon was considerably more extensive than at present, at the time of the removal of the instrument formerly in use, and that the restitution of the natural structure is now making slow progress. On this point the Committee have no knowledge from personal observation.

CASE XIII.—*See Note V. of the Preliminary Report, (p. 321.)*

This case has not been again presented to the Committee. The patient was thought to be radically cured when the note, to which reference has been made, was written.

The foregoing details complete the history of all that is important in relation to the cases which were made the subject of comment in the Preliminary Report. The patient mentioned in Note II. (p. 320,) of that paper, has been much deranged, and his insanity has interfered with the treat-

ment. He is no longer under the observation of the Committee. The cases described in Note III. (p. 320,) and Note VI. (p. 321,) have not been heard from since those notes were written.

CASE XIV.—*Common Inguinal Hernia, of about one year's standing; age of patient 27 years; radical cure in seven months.*

This patient, a female, was ruptured on the right side, during unusual exertion while preparing for a voyage from Ireland to this country in 1834. No surgical advice was taken until October, 1835, when she was directed to the care of Dr. CHASE by Dr. ISAAC PARRISH.

The details of the case will be found at length in "Chase on the Radical Cure of Hernia," p. 162.

April 19th, 1836. Patient examined this day by the Chairman. The Inguinal Truss of Dr. CHASE was applied on the 20th of April, 1835. The woman states that she suffered some pain, but not a great deal, from the action of the first truss. Another, with a block and spring more suitable to the formation of the individual's pelvis, was substituted on the 31st. The irritation then subsided, and the truss produced no more complaint. The retention was complete, from the first application on the 20th of October. The woman being far advanced in pregnancy, the truss was laid aside on the fourth of last month. No protrusion has taken place. She has a very large abscess of the left breast, which was opened by the lancet this morning.

May 16th. Seen by Drs. CHASE and R. COATES. Patient was delivered with rapidity on the 4th instant, and suffered severely with after-pains. It is thought that this test of the security of the retentive power of the abdominal tendons and fascia is sufficient to warrant complete reliance upon it, and the patient is directed not to resume her truss on leaving her chamber.

July 11th. Again visited by the Chairman. She is pursuing her usual avocations, and is pronounced radically cured.

March 30th, 1837. This patient continues perfectly well. On reviewing the notes, the Committee think it right to mention that the absence of protrusion during the last months of pregnancy, and even during labour, is a fortunate and not unfrequent result of the position of the gravid uterus, which displaces the intestines from their usual position. It was therefore the absence of protrusion during continued and severe after-pains which alone induced the conclusion that the cure might then be safely considered radical. These remarks are intended as a caution to the inexperienced, who might naturally conclude that the absence of all symptoms of hernia in the inguinal or femoral region, during the latter months of gestation and the period of labour, was a sufficient proof of the non-existence of the disease. In umbilical hernia, continued retention during the latter moments of labour would indeed be a strong argument in favour of the radical cure.

CASE XV.—*Common Inguinal Hernia, of seven years standing; age of patient 12 years; radical cure in seven months.*

Dec. 4th, 1835. CHASE's Inguinal Truss was applied on the 27th of November last. Some redness from irritation is visible when the truss is removed, but no inconvenience is felt from it. The retention has been constant and perfect from the first.

April 1st. There has been no protrusion. No difference between the size and resistance of the two rings can be distinguished on reverting the skin

of the scrotum before the finger. Some redness continues, but the patient insists that he is seldom aware of the presence of the instrument. There has been much less subcutaneous absorption than usual in this case.

June 22nd. Examined by the Chairman. The patient has often removed his truss for some hours at a time; he has taken walks, and has gone on swimming excursions repeatedly without it.

The opposite sides of the abdomen now appear perfectly similar in all respects. The redness and depression beneath the block have both disappeared. The case is believed by the Chairman to be radically cured, and he strongly advises the discontinuance of the truss.

March 31st, 1837. This little patient has been repeatedly seen by members of the Committee since the last date, and was critically examined by the Chairman in February. He wore the truss occasionally for some weeks after the 22nd of July, 1836. He is now perfectly well, vigorous and active.

CASE XVI.—*Ventro-inguinal Hernia, of six years standing; age of patient 10 years; cure radical.*

Feb. 26th, 1837. This case is fully detailed in Dr. CHASE's Treatise, (p. 166, Case XX. q. v.) but has only been seen by the Chairman of the Committee on the present occasion. The Ventro-inguinal Truss was applied December 13th, 1835. The patient testifies that there have been no signs of protrusion at any time since that day. Dr. CHASE considered the patient radically cured June 20th, 1836, six months after the commencement of the treatment, as prior to that time, by the patient's own showing, he had repeatedly left off the instrument during bathing excursions; but the boy's father compelled him to continue the use of the truss. He has more recently laid it aside on many occasions for several days together; has cast it off entirely for the last two weeks, and has been enjoying himself in skating on three different days without any protrusion whatever. The external ring is about the natural size, and there remain no marks of a truss ever having been used in the case, except in the persistence of a slight subcutaneous puffiness in the parts beneath the block. The patient is now radically cured, whatever may have been his condition on the 20th of June, 1836.

CASE XVII.—*Direct Inguinal Hernia, from coughing in an attack of asthma; case of four years standing; age of patient 45 years; radical cure of the hernia; persistence of the asthma.*

The details of this case will be found at length in "CHASE on Hernia," p. 167. The patient was first seen by the Chairman of the Committee, July 10th, 1836. He then stated that he had laboured under hernia for nearly five years. The orifice is stated to have been large and direct. It originally admitted two fingers. The old common truss had been employed, but the bowel frequently descended beneath the pad. Dr. CHASE first saw him October 28th, 1835. Hood's Parabolic Block, with CHASE's Truss-spring, was applied. The retention was perfect till the 30th of October, when an attack of asthma occasioned a protrusion. A truss with a firmer spring was employed, and the retention continued constant during the whole course of the treatment. After the introduction of CHASE's new Ventro-inguinal Truss, it was applied in this case, but the Committee possess no note of the date of this substitution.

July 11th, 1836. Examined by the Chairman. The truss now in use

(CHASE's Ventro-inguinal) has never given any inconvenience—all those previously employed had done so. The patient performs all his duties as a master stone-mason with composure and ease—a former fracture of the patella leading him to avoid very heavy lifting, by the advice of Dr. HARTSHORNE. In the early part of last month he left off his truss for ten days, and pursued his business without any accident; for which he was censured, and directed to continue the application of the instrument. The edges of the ring are now well marked and somewhat thickened, but are very little less contracted than on the sound side.

April 1st, 1837. Some two months ago this patient was seen by the Chairman. He continued to wear his truss occasionally when performing heavy lifting, and during attacks of asthma. Since that time he has been lost sight of by the Committee. No signs of protrusion have ever appeared during the considerable periods for which the truss has been relinquished, although no particular care has been used to avoid exertion in the pursuit of his usual avocations in the marble yard.

CASE XVIII.—*Inguinal Hernia, of four weeks standing, caused by an accident in riding on horse-back; age of patient 30 years; radical cure in seven months.*

The details of this case will be found in CHASE on Hernia—(Case XXIV. p. 171.) The bowel burst into the abdominal canal, near the middle of its track, not having passed through the internal ring at all. The internal orifice did not correspond with the external ring, but remained concealed beneath the tendon of the external oblique muscle. The Inguinal Truss was applied by Dr. CHASE, December 4th, 1835, and it was ordered to be laid aside July 17th, 1836. After the adjustment of the instrument, which required some more care than necessary in common inguinal hernia, it was worn day and night for about four months, and in the day time only for nearly three months longer.

Jan. 1st, 1837. Examined by the Committee. The patient states that he has never suffered a protrusion, from about the 10th of December, 1835, (one week after the first application of the truss,) to the present moment. He wore the instrument occasionally from the time he was ordered to relinquish it until about the 1st of December last, since which he has not applied it at all. The ring is now quite as firm and small, if not more so, than that on the opposite side. The parts formerly pressed upon by the truss, display not the slightest traces of its presence. Much adeps covers the lower part of the abdomen. This patient is considered radically cured.

CASE XIX.—*Umbilical Hernia, of many years standing; enormous orifice; complete retention by Chase's Umbilical Truss, with a block six inches in diameter; patient restored to usefulness, but deemed incurable.*

The details of this most interesting and still pending case, will be found drawn up to the 25th of July, 1836, in CHASE on Hernia, p. 174, (Case XXVIII.) The orifice, as measured by the Chairman, May 30th, 1836, was two inches and a half long by one and a half wide, running along the linea alba above and below the umbilicus; the sac, with the integuments covering it, was very large, and flabby after reduction. Dr. COATES thought that caution would be required in applying the truss, lest the whole mass should be reverted bodily within the abdomen! The patient was excessively fat.

A truss with a block six inches in diameter, was applied for some months, one of seven inches diameter was afterwards found preferable. The overlapping of the loose sac, which formed a soft cushion beneath the block, gave rise to excoriation and mucoid transformation of the skin, which was relieved by dusting with the impure carbonate of zinc. On the 17th of July, the orifice was contracted to at most half its former dimensions, and the sac had become diminished at least one-fourth.

April 29th, 1837. The patient was examined, and the truss removed by the Chairman this day. The sac, loose, flabby, and perfectly empty, even of serum, but not obliterated by adhesion, still remains, but is much diminished in size. There is no irritation of the surface, the parts being perfectly accustomed to the pressure of the instrument. The enormous obesity of the patient makes an accurate examination of the linea alba exceedingly difficult, but no signs of the hernial orifice could be ascertained by the finger. The truss was reapplied. The patient is perfectly comfortable, and attends to laborious duties with impunity.

CASE XX.—*Umbilical Hernia, of 21 months standing; age of patient two years; radical cure in five months by Chase's Umbilical Band.*

Of this case the Committee have no knowledge other than that derived from the mother and the surgeon, until after the completion of the cure. Attempts to relieve this patient (a female) by pressure with the hand when it cried or used exertion, were made without effect; but it is not certain that they were very faithfully made. The orifice is described to have been large enough to admit the end of the thumb with facility. The band was applied February 15th, 1836. Retention was constant and perfect, and the band was finally removed on the 12th of July. CHASE on Hernia, (Case XXVII., p. 173.)

January, 1837.—Day not noted. Case examined by the Chairman. There has been no protrusion since the band was first adjusted. No signs of the sac appear. The linea alba, where the opening was located, is now firm, but not quite so much so as the remainder of that tendinous expansion. The child is active and playful. She is considered radically cured.

CASE XXI.—*Congenital Hernia; truss applied at the age of two months; radical cure in twelve months.*

April 1st, 1837. This case is noted in order to show that very young children endure the truss without inconvenience, which is contrary to the opinion expressed in the Preliminary Report. The nurse states that Dr. CHASE applied the little Ventro-Inguinal Truss, which was shown by her to the Chairman, when the child was two months old. It is proper to mention that this instrument is preferred in all the varieties of inguinal hernia, occurring in children under five years of age, as it is better adapted than any other to the prominent abdomens and diminutive canals of these little patients. The truss was finally removed at the age of one year. The infant is now fourteen months old. The nurse insists that the truss never occasioned any inconvenience to the child, and very little redness of the part. The block rested directly on the skin for the greater part of the time, but occasionally the nurse inserted beneath it a layer or two of linen. The child is now radically cured. It is scarcely necessary to remind those who have

attempted the employment of trusses, with soft pads, in young infants, how much more severely the skin is usually affected by them.

CASE XXII.—*Common Inguinal Hernia, of many years standing; age of patient 27 years; radical cure in twelve months.*

The facts of this case, so far as the treatment is concerned, are taken from the statement of the patient, a highly intelligent gentleman, and the dates are added from the notes of Dr. CHASE. (CHASE on Hernia, Case XXXI. p. 177.)

The accident occurred in childhood. From the time when the disease was first perceived, to the 20th of January, 1835, a variety of trusses were successively employed, and neither care nor expense was spared in the selection. Not one of these instruments prevented the frequent descent of the bowel. The intestine escaped but once after the first application of CHASE's Inguinal Truss, which was made on the day just mentioned. This protrusion occurred within three days of that time, and led to the employment of an instrument with a stronger spring. The latter was worn without inconvenience, and produced scarcely any irritation. The truss was finally relinquished in January, 1836.

February 12th, 1837. Patient seen by the Committee. He states that since he laid aside the instrument he has performed a fatiguing journey to the west on horseback, sometimes travelling fifty miles in a day. He has used much exercise of all kinds, and yesterday inhaled the nitrous oxyde gas. He is muscular and powerful.

The radical character of the cure is most amply proved in this case.

CASE XXIII.—*Common Inguinal Hernia, of four months standing; age of patient about 45 years; radical cure in less than six months.*

February 26th, 1837. This patient called at the office of the Chairman. He is by trade a weaver, and stated that he became affected with hernia about the 1st of April, 1836. CHASE's Inguinal Truss was applied August 1st, 1836, and it was finally relinquished a few weeks ago. The man has continued at his trade up to the time of this note.

There are some traces of the secondary hyperemia still remaining on the parts which have been pressed upon by the block. No other external signs of its employment are discoverable.

The external ring, on the affected side, offers much more resistance to the finger, and is much more contracted than that on the other side. The patient is pronounced radically cured.

CASE XXIV.—*Sub-Umbilical Hernia, of many years standing; female about 35 years old; sac globular and pediculated; contraction of orifice and apparent obliteration of the sac; case still pending.*

Notes by the Chairman. November 29th, 1836. This female had a hernia through the linea alba, commencing about half an inch below the cicatrix of the umbilicus, and the circular orifice being about half an inch in diameter. The sac was surrounded by integuments much loaded with fat and densely fibrous cellular tissue, forming a globe nearly three inches in diameter, attached by a short pedicle as large as the middle finger.

The bowel filled this sac very readily on slight exertion, and was as

readily reduced. Strangulation had been repeatedly threatened. When the bowel was returned, the sac was found to contain abdominal serum, which could be instantly expressed, but slowly returned on the removal of pressure. The distension was not sufficient to support the weight of the globe, which hung down against the abdomen. CHASE'S Umbilical Truss was applied on the orifice, the pedicle being pressed downward out of the way.

January 13*th*, 1837. The tendinous orifice has been contracted to the diameter of three-eighths of an inch. The globular sac has been diminished very considerably. Its pedicle has been thrust down by the pressure of the block, until it appears as if attached entirely below the orifice of sac which has become flattened; while the walls are thicker and the subcutaneous cellular and adipose tissue is much more condensed, so that what was formerly a globe, now strongly resembles a condrilomatous tumour, except that the contracted serous lining of the cavity remains apparently unaltered in texture, and has formed no adhesions in the interior. The neck of the sac is probably closed, as there is no appearance of abdominal serum within. When the hernia is cured this excrescence may be safely and readily removed by the knife; for the present it is reverted upward and will be employed like a cushion beneath the block and over the orifice.

This singular hernia may probably have been produced by a small fatty tumour of the peritoneum forcing its way between the fibres of the tendon, and followed by the bowel forcing the tumour with its attachment bodily through the opening. See ABDOMEN, *fatty tumours of*, in the *Amer. Cyclop. of Pract. Med.*

April 29, 1837. Examined by the Chairman. The orifice is not discoverable; its site being again concealed by the base of the tumour, since it has been turned up in the form of a flap beneath the block. The sac now appears to be obliterated by adhesion or contraction, and the tumour is inflamed and slightly ulcerated, but gives the patient no pain. The case is from the country, and cannot have the advantage of constant surgical superintendence. Dr. COATES recommended that if the tumour should prove troublesome, it should be removed by the scissors or ligature.

CASE XXV.—*Note by Chairman; Common Inguinal Hernia; Truss applied at the age of fourteen months.*

This note is made merely to illustrate the applicability of trusses to young infants.

Nov. 18, 1836. The child is now eighteen months old. He has worn CHASE'S Ventro-Inguinal Truss four months, and has never suffered any considerable inconvenience from the pressure of the instrument, although the story of the mother betrays both ignorance and unwarrantable disobedience of orders in the management of it, and in consequence of these circumstances, temporary protrusion has frequently occurred. Still, the child's health, which was previously injured, apparently by abdominal irritations occasioned by the hernia, has been much improved during the action of the truss. The action of the block in this case, as in most instances of common inguinal hernia in young children, was confined to the neighbourhood of the internal and did not extend quite to the external ring. The attempt to approximate the edge too closely to the symphysis pubis, would, probably,

occasion some trouble in the management of the perineal strap. The Committee have never seen ventro-inguinal hernia in very young children.

CASE XXVI.—*Inguinal Hernia supposed to be Congenital; age of patient about 22 years; Permanent Retention by Hull's Truss for eight years; Ring not obliterated; Testicle reducible; Cure believed to be radical by the use of Chase's Inguinal Truss in eight months.*

April 8th, 1837. This patient is an intelligent young graduate from the country. His hernia was retained constantly by Hull's Truss for eight years. He believes there was no protrusion in all that time; yet on the day of its relinquishment, the bowel protruded.

He believes that he was then able to return the testicle into the abdomen at will; but in this he may have been deceived by its disappearance beneath the skin of the abdomen. He states that CHASE's Inguinal Truss was applied Feb. 18, 1836. It was worn constantly by day and night until the month of October, 1836—he then relinquished it entirely. This day the parts present no trace of the action of the truss. The external ring is somewhat larger than its fellow the opposite side, but no symptoms of a tendency to protrusion have been present at any time since the moment of relinquishing the instrument.

CASE XXVII.—*By Dr. Parrish; Double Hernia; ill health from its imperfect retention with trusses; Chase's Double Truss employed; perfect retention; improved health; case still pending.*

S. M., a lady about thirty-two years of age, applied to me in the summer of 1836, affected with ventro-inguinal hernia on the right side, and common inguinal on the other. She stated that about thirteen years ago she felt something give way while lifting a heavy weight. She felt sick and vomited, and was confined to her bed for several days. On getting up she discovered a small tumour in the left groin. She consulted an eminent surgeon, who applied a truss with a soft pad. She wore this instrument for five years, and it retained the bowel. About eight years ago she went into the country and threw off the truss, but found herself still liable to protrusion in this situation; after which, she took a long walk over a hilly road, and found herself affected with a hernia of the opposite side. She then applied a double truss, which she has worn ever since. During the whole of this period the patient has been subjected to great inconvenience, and frequently to severe attacks of pain from the imperfect retention of the bowel, and from the difficulty of adapting instruments to the parts. Her health is much impaired. She is subject to attacks of colic, poor appetite, pain after eating, &c. I advised a trial of Dr. CHASE's Truss.

7th Mo. 9th, 1836. The patient called to inform me that she had been wearing Dr. CHASE's Double Truss for about four weeks. It produced, for the first few days, great inflammation and soreness about the groins. The parts, however, soon became accustomed to it, and she experienced great relief from the instrument. Her appearance is much improved; her digestion good; she enjoys more comfort than she ever experienced under the use of any other instrument. The bowel is perfectly retained. She finds

it very important to have the instrument accurately adapted. She found some difficulty in accomplishing this at first.

1st Mo. 12th, 1837. S. M. called on me to-day to say that she still continues to wear Dr. CHASE's Truss. Her health is now good; she is entirely free from dyspeptic symptoms; experiences no pain from the instrument, and uses active exercise without causing pain. There has been no descent on the removal of the instrument for three months past. She considers the instrument far superior to any other in point of comfort.

CASE XXVIII.—*By the Chairman. Umbilical Hernia of eight years standing; age of patient ten years; cure believed to be radical in five months.*

Feb. 24th, 1837. This little patient is stated by her mother to have laboured under a small umbilical hernia for eight years. She has been wearing CHASE's Umbilical Truss since the second of December last. No signs of the sac are visible on removing the instrument, but a hernial orifice at the umbilicus admits the tip of the little finger. There are no signs of irritation about the parts pressed upon. The hernia had been prevented from increasing before the use of the truss, by careful bandaging.

April 20th. The patient again examined. The child has been using violent exertion, and the margin of the block has bruised the surrounding skin a little. There is no trace of irritation, but some slight secondary hyperemia is visible. No trace of a hernial orifice can be discovered. The patient is judged by the chairman to be radically cured, but Dr. CHASE declines relinquishing the use of the truss for the present.

CASE XXIX.—*By the Chairman. Inguinal Hernia of two years standing; age of patient 13 years; Radical Cure by Chase's Inguinal Truss in six months.*

April 27th. 1837. This little boy was brought before the Chairman this day. The facts connected with the previous history of the case are taken from the account by the child: the dates are from Dr. CHASE's record.

About two years ago he fell from a tree, astride upon a fence. The accident was soon followed by hernia on the right side, which rapidly enlarged, and the intestine descended into the scrotum. Dr. CHASE states that the finger readily entered the abdominal canal. His Inguinal Truss was applied on the 12th of May, 1836. On the night of the 13th it was laid aside till morning. From the 14th of May till the 7th of November, it was worn constantly, by day and night. Since the last date it has been entirely abandoned.

The two external rings appear now similar in all respects. There have been no symptoms of weakness, and the parts acted upon by the instrument retain no trace of its former presence. This child serves as an errand boy. He is radically cured.

CASE XXX.—*By the Chairman. Congenital Umbilical Hernia; Chase's Umbilical Band applied at the age of two months; cure deemed radical in two months.*

April 28th, 1837. This little patient is now fifteen months old. Before

the age of two months, the usual care in preserving the bowels in place by the hand, by bandage and compresses, and by a belt and soft pad had been tried without obvious effect. The father states that the Umbilical Truss of Dr. CHASE was applied when the child was two months old, and was steadily continued for six weeks, or, at most, two months, since which the case has been left totally unprotected—not the slightest symptom of protrusion of the bowel has occurred.

There is a very slight degree of puffiness about the umbilicus in this case, as though the cicatrix had not yet acquired its greatest degree of firmness; but the accidents of childhood in a vigorous infant, from the age of four to that of fifteen months, are deemed sufficient proof that the cure is radical.

The following highly interesting case was furnished by HENRY BOND, M. D., in reply to a note from the Chairman of the Committee, requesting an account of the particulars.

CASE XXXI.—*Femoral Hernia; supposed sloughing of strangulated omentum; return of hernia after the cicatrization of the abscess.*

On the 9th of April, 1836, I was called to Mrs. M. Y. aged about thirty-four years, who complained of severe pain in the abdomen, and told me she had the cramp colic. I prescribed a full dose of laudanum and castor oil. A few hours after, I called and found that she had been vomiting, and was in no respect better. I was now informed by an attendant of a fact which the patient had refused to communicate, viz: that she had "a lump in her side."

Upon examination, I found a femoral hernia of the left side, which was with much difficulty reduced by taxis. A truss was applied as soon as it could be procured. I visited her every day, for a short time, to ascertain that the hernia was retained.

On the 16th I was called to see her again, and found her in the same condition as on the 9th. Soon after my last visit the hernia returned while the truss was on, which she immediately removed. After repeated and persevering efforts, and many hours delay, it was again reduced, and the truss again applied.

On the 18th, about mid-day, it suddenly returned, when she was in the street, attended with such violent symptoms that she with difficulty reached her house, which was only at a short distance.

Within an hour I saw her, and again attempted to reduce the hernia, but without success. I attempted, immediately after this, to obtain a consultation, but each of the eminent surgeons to whom I applied was either absent or indispensably engaged. In the evening, two medical friends visited her with me, and reduction was again attempted without success. She was bled copiously; active purgative enemata were repeatedly administered, and, afterwards, opiate enemata. Cold was applied to the hernial tumour, and warm fomentations to the abdomen.

In the forenoon of the 19th, further attempts at reduction were made by myself and by the most competent surgical aid in the city. Vomiting and retching came on soon after the return of the hernia yesterday, and continued all night, accompanied with a pain which occasioned a constant groaning, and prevented sleep entirely until morning, when a short nap was procured by the strong opiate enemata. She has great thirst, and rejects eve-

ry thing swallowed. Pulse very frequent; tongue parched; great heat and tenderness in the abdomen; the tenderness being very great about the umbilicus, but extending over the whole cavity. The hernial tumour is tense and tender, but has less sensibility and pain than the abdomen.

She was told that her case was regarded as hopeless without an operation, and that this, in her case, would be attended with great danger. She promptly decided, as she had done before, that she would not consent to an operation. Attempts at reduction were now discontinued. She remained without any essential change or abatement in her symptoms until the night of the 21st.

On the morning of the 22nd, I found a great change in her condition. The vomiting had ceased, her thirst had abated, and her appetite had returned. The heat, pain, and tenderness in the abdomen, which were unabated yesterday, were now greatly diminished; her countenance has improved, and she has had a slight alvine evacuation. The hernial tumour continues undiminished in size, density and sensibility.

April 28th. She has had no return of the vomiting, nor of the heat, pain, and tenderness of the abdomen since the 22nd. The tumour has been increasing very considerably in size, and has been extremely tender, but without any considerable pain so long as the patient is at rest. She has had stools every day, but not without the use of purgatives. The appetite is variable. The patient has been down stairs repeatedly, but is unable to straighten the limb, owing to the tenderness about the top of the thigh. While the tumour has been increasing in size during the last few days, it has become rather softer, and its outline is less distinctly defined. During this day, she has experienced a sharp, burning pain, such as commonly occurs when an abscess is about to open spontaneously. About 9 o'clock, P. M., it burst and discharged a considerable quantity of dark and very fœtid matter.

On the 29th, the patient informed me that she had rested well: that this morning she pulled "a core" out of the opening, at least six inches long, and as large as her little finger: that it did not look like other cores, as it was very dark coloured and fœtid. I did not see it, but had no doubt, from her description, that it was a part of the omentum.

The discharge rapidly subsided, and the opening healed entirely within ten days. Some stiffness, and inability to produce complete extension of the limb remained a few days after the opening occurred. As soon as the discharge, and the sensibility of the part would admit of it, I applied a truss with a view of consolidating the parts and to insure the certainty of effecting a radical cure.

On the 10th of May, she was so well as to be about, attending to her ordinary laborious occupation. The truss was worn only a very few days, as I was told by some of my surgical friends that it was useless, *as, from the condition of the parts, there must necessarily be a radical cure without the application of a truss.*

July 3d. I was again called, and found that she had very great pain in the left groin, extending into the iliac region. She had nausea and obstruction of the first passages. There was a tumour in the groin, below Poupart's ligament, about the size of a marble. I made some attempts to reduce it, but without success, and had some doubts whether it was a hernia. I directed v. s. ℥xviii. copious purgative enemata, and afterwards a large

dose of castor oil. In a little time she was relieved of the pain and the tumour disappeared.

July 31*st.* The hernia returned yesterday, and was so painful as to prevent any sleep last night. I was called at 1, P. M. The tumour has become larger to-day and more painful, and she has been vomiting all the forenoon. She has had no stool since yesterday morning. The tumour is just below, and parallel with Poupart's ligament, and is about the size of the last joint of my thumb, firm, and painful on pressure. The patient complains of great pain in the abdomen, chiefly in and above the left iliac region. I directed a copious and active purgative enema to be followed by a cathartic draught; called again, in a short time, with a medical friend, and found her in no degree relieved; directed two dozen leeches to be applied to the tumour, and afterwards cold to be applied; ordered a strong purgative enema, and after that operated, a large dose of castor oil. After the use of these remedies she became a little easier. At a little past midnight she ceased vomiting, and had a stool.

August 1*st.* In the morning I found the tumour soft, and it was reduced without difficulty.

Since the last date, the hernia has reappeared several times in spite of the different trusses she has made use of. She has generally succeeded in returning it herself; but, on three occasions, it has been attended with the same distress and difficulty as on the 31st of July.

One chief reason why the trusses have not been more effectual is, that her occupation obliges her frequently to carry heavy burdens, and to pass up and down a very steep flight of steps.

NOTE.

During the engrossment and final reading of the above Report and Cases, Dr. ASHMEAD, the third member of the Committee, was prevented from attending its meetings by indisposition and absence from the city, and his name does not appear among the signatures. R. C.

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